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THE

BRITISH PHARMACOPŒIA,

PUBLISHED UNDER THE DIRECTION OF

THE GENERAL COUNCIL OF
MEDICAL EDUCATION AND REGISTRATION
OF THE UNITED KINGDOM,

Pursuant to the Medical Act (1858).

1885.

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OF
MEDICAL EDUCATION AND REGISTRATION
OF THE UNITED KINGDOM.

January, 1885.

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⁂ *For lists of additions to, omissions from, and other alterations as regards the previous Pharmacopœia, see pages* xxi *to* xxvi.

PREFACE

TO THE

BRITISH PHARMACOPŒIA, 1885.

The interval which has elapsed since the publication of the British Pharmacopœia in 1867 has been productive of changes relating to the matter and objects of that work which have rendered its revision and reproduction necessary. Not only have many new remedies been introduced into medical practice, which seemed to call for official recognition, but of those which had already received such recognition there are many with regard to which much extended knowledge has been acquired as to their sources and scientific characters, as well as of the method by which they may be best prepared for use in medicine.

In the production of the present edition of the Pharmacopœia pains have been taken to bring the whole of the matter up to the existing state of knowledge. No change has been made in the arrangement or the general construction of the work. In the method adopted for representing the composition, and in some cases the assumed constitution, of certain bodies of definite chemical nature by symbolic formulæ, the old system, which, as well as the new, was previously adopted, having been now completely superseded, has been omitted. Some change has been made in chemical nomenclature, the object of which has been to remove previously existing inconsistencies, and to reconcile the names used in the Pharmacopœia with one another, and, at least in principle, with those employed by modern scientific chemists. In making this change it has been necessary to provide Latin names which admit of being abbreviated, as they usually are in medical prescriptions, without rendering the meaning obscure. As in previous editions, both the English and Latin names have been selected as those commonly used and most familiar, but not necessarily as literal translations one of the other. The nomenclature of alkaloids has been made to harmonise with that adopted in other pharmacopœias and in pharmacy generally.

An attempt has been made to introduce a method of setting out the relative quantities of ingredients used in some of the processes by supplementing the respective weights and measures by proportional parts. It was at first proposed that the use of parts should altogether supersede that of specified weights and measures, but it was thought better, at least for the present, merely to supplement weights and measures by parts where the context permits, and where this can be made more clearly to show the proportion which the several parts bear to each other. Wherever this method is employed, the term 'parts' signifies parts by weight, and the term 'fluid parts' signifies the volume of an equal number of parts of water.

Among the objects contemplated in revising the processes for the various preparations has been that of promoting increased uniformity of strength and other properties, especially in certain of the more active medicines. It will be found that this has been successfully provided for in several instances. One of the means by which results of this kind are obtained in the action of liquid on solid ingredients consists in reducing the solid matter which is to be used to a nearly uniform state of disintegration, and then passing it through a sieve of a particular-sized mesh. The degrees of disintegration are represented by numbers ranging from No. 20 to No. 60, these numbers indicating the numbers of parallel wires of ordinary thickness within a linear inch forming the meshes of the sieves used. Greater precision has been given to the descriptions of some of the bodies referred to by appending specific gravities and solubilities in cases where these were not previously included. The application of reagents for characterising products and for the detection of impurities has been considerably extended, and many fresh synonyms have been added. Temperature is still given in Fahrenheit's degrees, but in every case the equivalent on the Centigrade scale is added in brackets.

In the description of chemical substances now for the first time introduced into the Pharmacopœia, unless some special reason has existed for giving full and detailed processes, it has been deemed sufficient to refer to their production in general terms, while their identity is established by their characters and reactions with chemical tests.

It will be observed that the amount of matter has been considerably increased—to the extent of nearly a hundred pages—and this has been caused by the introduction of a large number of new medicines. More might have been added, but it was felt with regard to most of them that they had not been sufficiently recognised by the medical profession, whilst in regard to others it was considered that there were already in the Pharmacopœia agents having like properties and of equal if not of greater value.

The Council beg to acknowledge important suggestions and assistance received from several of the medical authorities, from scientific bodies, medical practitioners, and from pharmacists.

The Council think it right further to say that, in the preparation of this edition of the Pharmacopœia, they have had the advantage of the valuable services of the following gentlemen who have acted as

Editors.

Professor Redwood.
Professor Bentley.
Professor Attfield.

The general supervision of the preparation of the work has been entrusted to a Committee consisting of the following members of the Council:—

Dr. Quain, *Chairman.*
Sir Henry W. Acland, *President of the Council.*
Edward Bradford, Esq.
Thomas Collins, Esq.
Dr. Haldane.
Professor Rawdon Macnamara.
Sir Henry A. Pitman.
Dr. Aquilla Smith.

August 1885.

PREFACE

TO THE

BRITISH PHARMACOPŒIA, 1867.

By the Medical Act of 1858, section 54, it is enacted 'that the General Council shall cause to be published under their direction a Book containing a list of medicines and compounds, and the manner of preparing them, together with the true weights and measures by which they are to be prepared and mixed, and containing such other matter and things relating thereto as the General Council shall think fit, to be called "British Pharmacopœia;" and the General Council shall cause to be altered, amended, and republished, such Pharmacopœia as often as they shall deem it necessary.'

And by a subsequent Act, the 25th and 26th Victoria, cap. 91, which recites amongst other things that different Pharmacopœias have hitherto been in use in England, Scotland, and Ireland, and that the Pharmacopœia to be published by the General Council is intended to supersede the above-mentioned Pharmacopœias, it is enacted that 'the British Pharmacopœia, when published, shall for all purposes be deemed to be substituted throughout Great

Britain and Ireland for the several above-mentioned Pharmacopœias; and any Act of Parliament, Order in Council, or custom relating to any such last-mentioned Pharmacopœias shall be deemed, after the publication of the *British* Pharmacopœia, to refer to such Pharmacopœia.'

The present work is produced in compliance with, and under the sanction and authority of, these Acts of Parliament. It is intended to afford to the members of the Medical Profession and those engaged in the preparation of medicines throughout the British Empire one uniform standard and guide, whereby the nature and composition of substances to be used in medicine may be ascertained and determined. The Council have endeavoured to include in it all such remedies as the existing state of medical practice seemed to require. Whilst it has been necessary to establish uniformity of strength and composition in medicines which, although bearing the same names, have heretofore differed in these respects, according as they have been used in different parts of the kingdom, care has been taken, as far as possible, to provide for the requirements and to meet the wishes of all those for whose use the British Pharmacopœia is published.

In preparing the first edition of the work it was necessary [illegible]ngage the services of Committees in London, Edinburgh, and Dublin, who had to execute the difficult task, which had previously been attempted in vain, of reducing to one standard the processes and descriptions of three different Pharmacopœias, and, what was still more difficult, of reconciling the varying usages in pharmacy and prescriptions of the people of three countries hitherto in these respects separate and independent. But the important work of amalgamation having been effected, and national differences reconciled, in some cases at the cost of mutual concession, it has been thought desirable, in preparing a new edition, to submit the work to a general revision with the view of removing any defects that might be discovered, and of supplying ascertained deficiencies.

In this edition, accordingly, some medicines not included in the former one have been introduced, some names by which medicines have been designated have been changed, some processes have been altered, and descriptions have been modified.

A new arrangement of the matter has been adopted, by which the descriptions hitherto comprised under a separate head of Materia Medica are included in one list with Preparations and Compounds, the whole being arranged in alphabetical order. This plan has already been adopted in several of the foreign Pharmacopœias. It will be found to facilitate reference and to obviate an inconvenience that has been experienced from a portion of the information relating to certain medicines being contained in a different part of the work from that in which the processes for their production are described.

The Pharmacopœia having for its objec[illegible]t so much the selection as the definition of substances which the physician prescribes, and which are required to be kept at one safe and uniform standard of strength and composition, some remedies may have been retained in it which have ceased to be in general use, and others introduced the value of which, although well attested, has not yet been generally recognised.

The doses of all the more important medicines are now for the first time appended to the other information concerning them, the quantities stated under this head being intended to represent average doses, in ordinary cases, for adults. These doses are indicated in compliance with a generally expressed wish. They are not authoritatively enjoined by the Council, and the practitioner must rely on his own judgment and act on his own responsibility in graduating the doses of any therapeutic agents which he may wish to administer to his patients. Important changes in the strength of medicines, and especially of powerful medicines, are specified in footnotes.

Pains have been taken to make the descriptions of all the substances referred to in the work sufficiently comprehensive and minute to afford a clear indication of what the medicines of the Pharmacopœia are intended to be, and to enable those who are engaged in their administration to determine the identity and test the purity of such as are met with in commerce. In the descriptions of natural products reference is made to their sources. When they belong to the animal or vegetable kingdoms, the scientific names of the animals or plants yielding them, if known, are given, in addition to the names under which they are used in medicine; and reference is generally made, in the case of plants, to the best authorities for the scientific descriptions of them, and to works in which correct figures may be found. Mineral substances are described with reference to their chemical characters and composition; and generally, in the descriptions of products, whether natural or manufactured, the distinguishing characters and tests are included, where such can be referred to with advantage. There are some medicines for the preparation of which it is essential that precise directions should be given, namely such as can only be obtained by some peculiar process, and with the exact composition of which we are but imperfectly acquainted: processes are also, in most instances, appended to the descriptions of chemical compounds of definite and known composition, which admit of exact definition in other ways. In many of the latter cases, however, it is left optional with the manufacturer to use the processes given, or others by which products may be obtained that will accord with the descriptions and tests given for their identification.

In the previous edition of the British Pharmacopœia chemical symbols were introduced for expressing the composition of bodies of definite chemical constitution. By this method of notation, as generally adopted by chemists, not only is the elementary composition of bodies represented, but also their constitution; chemical *formulæ* being so constructed as to indicate the supposed distribution or arrangement, as well as the proportions of the respective elements. On this point, however, differences of opinion often exist, and the prevailing doctrines are subject to change with the progress of investigation and the extension of knowledge. In relation also to the numbers corresponding to the symbols of the elementary bodies, chemists are not agreed, and there are, in fact, at present, two tables of equivalents, one of which has been long in use, and the other more recently introduced. Important changes in these respects are now occurring, and the symbolic notation of the British Pharmacopœia of 1864, although still recognised in several of the schools and various elementary works on chemistry, has ceased to be used by some of the most eminent chemists in this country. It was represented to the Council, on high chemical authority, that, under such circumstances, symbolic *formulæ* might with advantage be omitted from the Pharmacopœia, and other means adopted for defining what is known of the composition of the substances referred to. The Council, however, did not think it expedient to relinquish the use of such *formulæ*, or to pronounce, directly or by implication, an opinion upon the comparative merits of the two systems referred to, but determined to represent chemical substances of definite chemical constitution both by the old and also by the new method of notation. In all cases, therefore, where chemical symbols are used, two *formulæ* are given, one according to the old, and the other according to the new system. These are distinguished from each other by the use of different types, the *formulæ* according to the old system being printed in the lighter Roman type (Al), and those according to the new system in the heavier Egyptian type (**Al**).

In the use of names to designate medicines, the Council have endeavoured to adopt such as, with a due regard to conciseness, are most explicit and most likely to be understood, while at the same time they do not unnecessarily involve scientific theories that are liable to change, and are not likely, when employed in prescriptions, to excite the prejudices or the fears of those for whom the medicines may be ordered. Some names have been altered in accordance with these principles, but changes of name have in no case been introduced unless there appeared to be strong grounds for them.

No alteration has been made in the weights and measures which in the edition of 1864 were directed to be used in the preparation of medicines. The grain weight, established by law in this country, is well known and well defined. It has been in use from a very remote period, and forms a convenient unit for estimating the weight of many medicines. The avoirdupois ounce and pound, being the weights practically used in the sale of medicines and generally in commercial transactions, were adopted in the edition of 1864, and are still retained in preference to troy weights of the same denominations. It must be admitted that the absence in the present system of any denomination of weight between the grain and the avoirdupois ounce of 437·5 grains, and the fact that the ounce is not a simple multiple of the grain, are grave defects; still it has not been thought desirable to make any change in this respect at present, especially as no practical inconvenience appears to be experienced *in preparing* by means of these weights the medicines ordered in the Pharmacopœia. It is strongly urged upon all medical men to avoid the use of the terms ounce and pound with reference to any other than the avoirdupois or Imperial Standard weight; but it will be optional with the physician *in prescribing* to use the symbols ℈ and ʒ, the former representing 20 and the latter 60 grains, if such should be found to conduce to accuracy or convenience. In the measurement of liquids the Imperial measure is used for the higher denominations, and the fluid-ounce and its subdivisions into fluid drachms and minims for the lower denominations of volume. These measures are convenient, and have become familiar, having been used throughout the United Kingdom for many years.

The Council are not insensible to the advantages that would result from the adoption of one uniform system of weights and measures, to be used alike for all substances and in all countries, and they observe with satisfaction the efforts which have been made for the realisation of this object; but considering the paramount importance of avoiding errors in preparing and dispensing medicines, they cannot recommend that, in such operations, a system should be adopted which has been as yet but little used, and is to a great extent unknown, in this country; and on this account they have not employed the metrical system, even as an alternative, excepting in the processes for volumetric estimations, which are now so arranged that the same solutions may be made and used either with British weights and measures or with those of the metrical system. To facilitate the latter mode of using them, a table is appended to the description of each volumetric solution, in which the quantities to be used are represented in grammes and cubic centimetres, as well as in grains and grain-measures. The tables for showing the relations existing between the British and the metrical weights and measures have been made more full and comprehensive than they were in the previous edition.

Temperature in all cases, excepting where otherwise stated, is to be determined by Fahrenheit's thermometer, and specific gravities are to be taken at the temperature of 60°.

When a *water-bath* is directed to be used, it is to be understood that this term refers to an apparatus by means of which water or its vapour, at a temperature not exceeding 212°, is applied to the outer surface of a vessel containing the substance to be heated, which substance may thus be subjected to a heat near to, but necessarily below, that of 212°. In the *steam-bath* the vapour of water at a temperature above 212°, but not exceeding 230°, is similiarly applied.

The Council think it right to add that the present edition of the Pharmacopœia has been prepared by Professor REDWOOD, of the Pharmaceutical Society, and Mr. WARINGTON, of Apothecaries' Hall, under the direction of a Committee of the Council, consisting of the following Members:—Dr. BURROWS, Dr. APJOHN, Dr. CHRISTISON, Dr. SHARPEY, and Dr. QUAIN, who also acted as Honorary Secretary.

April 1867.

CORRECTIONS.

a. To formulæ and descriptive matter.

Page 154, line last, *for* drachms *read* fluid drachms.
,, 164, ,, 11, ,, ½ to 2 ,, ¼ to 1.
,, 211, ,, 13, ,, Root ,, Rhizome.
,, 213, ,, 21, ,, CH_2I ,, CHI_3.
,, 241, ,, 17, ,, 1·407 ,, 1·047.
,, 249, ,, 28–29, ,, insoluble ,, soluble.
,, 404, ,, 19, ,, to ,, in.
,, 416, ,, 10, ,, Root ,, Rhizome.
,, 450, ,, 18, ,, 19 ,, 191.

b. To list of added preparations.

,, xxi, *add* Aqua Anisi.
,, xxii, ,, Trochisci Acidi Benzoici.

c. To cross references.

,, 4, line 10, *add* Linimentum Terebinthinæ Aceticum.
,, 34, ,, 8, ,, Unguentum Hydrargyri.
,, 57, ,, 17, ,, Liquor Atropinæ Sulphatis.
,, 228, ,, 16, ,, Tinctura Quininæ Ammoniata.
,, 278, ,, 6, ,, Trochisci Acidi Benzoici.
,, 316, ,, 24, ,, Emplastrum Plumbi Iodidi.
,, ,, ,, 26, ,, Glycerinum Plumbi Subacetatis.
,, 44, ,, 22, *omit* Liquor Ammonii Citratis Fortior.
,, 115, ,, 17, ,, Acidum Sulphuricum Aromaticum.
,, 314, ,, 27, ,, Glycerini.
,, 405, ,, 13, ,, third pair of commas.
,, 31, ,, 16 } *for* 1 *read* 1½ fluid ounce.
,, 73, ,, 13 }
,, 49, ,, 3, ,, 11 ,, 10
,, 80, [illegible] 25, ,, 6 ,, 8
,, ,, ,, 26, ,, 5 ,, 4
,, 92, ,, 21 } ,, 22 ,, 14½
,, ,, ,, 22 }
,, 115, ,, 24, ,, 11 ,, 12
,, 202, ,, 30, ,, 8 ,, 10
,, 315, ,, 20, ,, 9 ,, 10
,, 331, ,, 13, ,, 4 ,, 4½
,, 355, ,, last ,, 8 ,, 16

ARTICLES AND PREPARATIONS INCLUDED IN THE BRITISH PHARMACOPŒIA OF 1885, WHICH WERE NOT IN THAT OF 1867 NOR IN THE 'ADDITIONS' OF 1874.

Acidum Boricum
Acidum Carbolicum Liquefactum
Acidum Chromicum
Acidum Hydrobromicum Dilutum
Acidum Lacticum
Acidum Lacticum Dilutum
Acidum Meconicum
Acidum Oleicum
Acidum Phosphoricum Concentratum
Acidum Salicylicum
Alcohol Ethylicum
Aloin
Apomorphinæ Hydrochloras
Argenti et Potassii Nitras
Arsenii Iodidum
Bismuthi Citras
Bismuthi et Ammonii Citras
Butyl-Chloral Hydras
Caffeina
Caffeinæ Citras
Calamina Præparata
Calcii Sulphas
Calx Sulphurata
Chrysarobinum
Cimicifugæ Rhizoma
Cinchonidinæ Sulphas
Cinchoninæ Sulphas
Coca
Cocainæ Hydrochloras
Codeina
Collodium Vesicans
Cupri Nitras
Elaterinum
Ergotinum
Extractum Belladonnæ Alcoholicum
Extractum Cascaræ Sagradæ
Extractum Cascaræ Sagradæ Liquidum
Extractum Cimicifugæ Liquidum
Extractum Cocæ Liquidum
Extractum Gelsemii Alcoholicum
Extractum Jaborandi
Extractum Rhamni Frangulæ
Extractum Rhamni Frangulæ Liquidum
Extractum Taraxaci Liquidum
Gelsemium
Glycerinum Aluminis
Glycerinum Plumbi Subacetatis
Glycerinum Tragacanthæ
Infusum Jaborandi
Injectio Apomorphinæ Hypodermica
Injectio Ergotini Hypodermica
Iodoformum
Jaborandi
Lamellæ Atropinæ
Lamellæ Cocainæ
Lamellæ Physostigminæ
Liquor Acidi Chromici
Liquor Ammonii Acetatis Fortior
Liquor Ammonii Citratis Fortior
Liquor Arsenii et Hydrargyri Iodidi
Liquor Calcii Chloridi
Liquor Ferri Acetatis
Liquor Ferri Acetatis Fortior
Liquor Ferri Dialysatus

Liquor Morphinæ Bimeconatis
Liquor Sodii Ethylatis
Lupulinum
Menthol
Morphinæ Sulphas
Oleatum Hydrargyri
Oleatum Zinci
Oleo-Resina Cubebæ
Oleum Eucalypti
Oleum Pini Sylvestris
Oleum Santali
Paraffinum Durum
Paraffinum Molle
Physostigmina
Pilocarpinæ Nitras
Potassii Cyanidum
Quininæ Hydrochloras
Rhamni Frangulæ Cortex
Rhamni Purshiani Cortex
Salicinum
Sodii Bromidum
Sodii Iodidum
Sodii Salicylas
Sodii Sulphis
Sodii Sulphocarbolas
Sodium
Spiritus Ætheris Compositus
Spiritus Cinnamomi
Staphisagriæ Semina
Suppositoria Iodoformi
Tabellæ Nitroglycerini
Thymol
Tinctura Chloroformi et Morphinæ
Tinctura Cimicifugæ
Tinctura Gelsemii
Tinctura Jaborandi
Tinctura Podophylli
Trochisci Santonini
Unguentum Acidi Borici
Unguentum Acidi Carbolici
Unguentum Acidi Salicylici
Unguentum Calaminæ
Unguentum Chrysarobini
Unguentum Eucalypti
Unguentum Hydrargyri Nitratis Dilutum
Unguentum Iodoformi
Unguentum Staphisagriæ
Unguentum Zinci Oleati
Vapor Olei Pini Sylvestris
Zinci Sulphocarbolas

Articles and Preparations included in the British Pharmacopœia of 1867 or in the 'Additions' of 1874, but omitted in the British Pharmacopœia of 1885.

Areca
Cadmii Iodidum
Castoreum
Decoctum Ulmi
Digitalinum
Dulcamara
Enema Tabaci
Ferri Iodidum
Ferri Oxidum Magneticum
Ferri Peroxidum Humidum
Hydrargyri Iodidum Viride
Infusum Dulcamaræ
Liquor Atropiæ
Mistura Gentianæ
Pilula Quiniæ
Rhamni Succus
Sodæ Acetas
Stramonii Folia
Syrupus Rhamni
Tinctura Castorei
Ulmi Cortex
Unguentum Cadmii Iodidi

ARTICLES AND PREPARATIONS THE NAMES OF WHICH HAVE BEEN ALTERED.

Former Names, 1867 or 1874.	Present Names, 1885.
Aconitia	Aconitina
Albumen Ovi	Ovi Albumen
Ammoniæ Benzoas	Ammonii Benzoas
Ammoniæ Carbonas	Ammonii Carbonas
Ammoniæ Nitras	Ammonii Nitras
Ammoniæ Phosphas	Ammonii Phosphas
Arnicæ Radix	Arnicæ Rhizoma
Assafœtida	Asafœtida
Atropia	Atropina
Atropiæ Sulphas	Atropinæ Sulphas
Beberiæ Sulphas	Beberinæ Sulphas
Calcis Carbonas Præcipitata	Calcii Carbonas Præcipitata
Calcis Hydras	Calcii Hydras
Calcis Hypophosphis	Calcii Hypophosphis
Calcis Phosphas	Calcii Phosphas
Calx Chlorata	Calx Chlorinata
Canellæ Albæ Cortex	Canellæ Cortex
Cardamomum	Cardamomi Semina
Catechu Pallidum	Catechu
Cinchonæ Flavæ Cortex	Cinchonæ Cortex
Cinchonæ Pallidæ Cortex	Cinchonæ Cortex
Decoctum Cinchonæ Flavæ	Decoctum Cinchonæ [Rubræ]
Ecbalii Fructus	Ecballii Fructus
Emplastrum Cerati Saponis	Emplastrum Saponis Fuscum
Enema Assafœtidæ	Enema Asafœtidæ
Enema Magnesiæ Sulphatis	Enema Magnesii Sulphatis
Extractum Cinchonæ Flavæ Liquidum	Extractum Cinchonæ [Rubræ] Liquidum
Ferri et Ammoniæ Citras	Ferri et Ammonii Citras
Ferri et Quiniæ Citras	Ferri et Quininæ Citras
Hydrargyri Sulphas	Hydrargyri Persulphas
Infusum Cinchonæ Flavæ	Infusum Cinchonæ [Rubræ] Acidum
Liquor Ammoniæ Acetatis	Liquor Ammonii Acetatis
Liquor Ammoniæ Citratis	Liquor Ammonii Citratis
Liquor Atropiæ Sulphatis	Liquor Atropinæ Sulphatis
Liquor Bismuthi et Ammoniæ Citratis	Liquor Bismuthi et Ammonii Citratis
Liquor Calcis Chloratæ	Liquor Calcis Chlorinatæ
Liquor Magnesiæ Carbonatis	Liquor Magnesii Carbonatis

Former Names, 1867 or 1874.	Present Names, 1885.
Liquor Magnesiæ Citratis	Liquor Magnesii Citratis
Liquor Morphiæ Acetatis	Liquor Morphinæ Acetatis
Liquor Morphiæ Hydrochloratis	Liquor Morphinæ Hydrochloratis
Liquor Potassæ Permanganatis	Liquor Potassii Permanganatis
Liquor Sodæ Arseniatis	Liquor Sodii Arseniatis
Liquor Sodæ Chloratæ	Liquor Sodæ Chlorinatæ
Liquor Strychniæ	Liquor Strychninæ Hydrochloratis
Lithiæ Carbonas	Lithii Carbonas
Lithiæ Citras	Lithii Citras
Magnesia	Magnesia Ponderosa
Magnesiæ Carbonas	Magnesii Carbonas Ponderosa
Magnesiæ Carbonas Levis	Magnesii Carbonas Levis
Magnesiæ Sulphas	Magnesii Sulphas
Morphiæ Acetas	Morphinæ Acetas
Morphiæ Hydrochloras	Morphinæ Hydrochloras
Physostigmatis Faba	Physostigmatis Semen
Pilula Aloes et Assafœtidæ	Pilula Aloes et Asafœtidæ
Pilula Assafœtidæ Composita	Pilula Asafœtidæ Composita
Podophylli Radix	Podophylli Rhizoma
Potassæ Acetas	Potassii Acetas
Potassæ Bicarbonas	Potassii Bicarbonas
Potassæ Bichromas	Potassii Bichromas
Potassæ Carbonas	Potassii Carbonas
Potassæ Chloras	Potassii Chloras
Potassæ Citras	Potassii Citras
Potassæ Nitras	Potassii Nitras
Potassæ Permanganas	Potassii Permanganas
Potassæ Prussias Flava	Potassii Ferrocyanidum
Potassæ Sulphas	Potassii Sulphas
Potassæ Tartras	Potassii Tartras
Potassæ Tartras Acida	Potassii Tartras Acida
Quiniæ Sulphas	Quininæ Sulphas
Serpentariæ Radix	Serpentariæ Rhizoma
Sodæ Arsenias	Sodii Arsenias
Sodæ Bicarbonas	Sodii Bicarbonas
Sodæ Carbonas	Sodii Carbonas
Sodæ Carbonas Exsiccata	Sodii Carbonas Exsiccata
Sodæ Citro-tartras Effervescens	Sodii Citro-tartras Effervescens
Sodæ Hypophosphis	Sodii Hypophosphis
Sodæ Nitras	Sodii Nitras
Sodæ Phosphas	Sodii Phosphas
Sodæ Sulphas	Sodii Sulphas
Sodæ Valerianas	Sodii Valerianas
Strychnia	Strychnina
Suppositoria Morphiæ	Suppositoria Morphinæ

Former Names, 1867 or 1874.	Present Names, 1885.
Suppositoria Morphiæ cum Sapone	Suppositoria Morphinæ cum Sapone
Tinctura Assafœtidæ	Tinctura Asafœtidæ
Tinctura Quiniæ	Tinctura Quininæ
Tinctura Quiniæ Ammoniata	Tinctura Quininæ Ammoniata
Trochisci Morphiæ	Trochisci Morphinæ
Trochisci Morphiæ et Ipecacuanhæ	Trochisci Morphinæ et Ipecacuanhæ
Trochisci Potassæ Chloratis	Trochisci Potassii Chloratis
Trochisci Sodæ Bicarbonatis	Trochisci Sodii Bicarbonatis
Unguentum Aconitiæ	Unguentum Aconitinæ
Unguentum Atropiæ	Unguentum Atropinæ
Unguentum Veratriæ	Unguentum Veratrinæ
Valerianæ Radix	Valerianæ Rhizoma
Vapor Coniæ	Vapor Coninæ
Veratri Viridis Radix	Veratri Viridis Rhizoma
Veratria	Veratrina
Vinum Quiniæ	Vinum Quininæ

SUBSTITUTIONS.

Antimonium Nigrum Purificatum	*for*	Antimonium Nigrum
Cinchonæ Rubræ Cortex (in preparations)	"	Cinchonæ Flavæ Cortex Cinchonæ Pallidæ Cortex
Pulvis Elaterini Compositus	"	Pulvis Elaterii Compositus
Tinctura Cinchonæ [Rubræ]	"	Tinctura Cinchonæ Flavæ
Unguentum Glycerini Plumbi Subacetatis	"	Unguentum Plumbi Subacetatis Compositum

PREPARATIONS THE COMPOSITION OF WHICH HAS BEEN ALTERED.

(*Minor alterations are not included.*)

Acidum Sulphurosum
Alumen
Antimonium Sulphuratum
Extractum Cinchonæ Liquidum
Infusum Cinchonæ Acidum
Injectio Morphinæ Hypodermica
Liquor Epispasticus
Liquor Iodi
Oleum Phosphoratum
Pilula Phosphori
Pulvis Glycyrrhizæ Compositus
Tinctura Quininæ
Unguentum Hydrargyri Ammoniati
The fatty basis of the four suppositories of B.P. 1867 is now oil of theobroma only
In some of the ointments paraffins have been substituted for lard
Scammony Resin has been substituted for Scammony in most preparations of Scammony

ALTERATIONS (*continued*).

The strengths of the following preparations have been altered from 1 in 109 *to* 1 *in* 100.

- Liquor Arsenicalis
- Liquor Arsenici Hydrochloricus
- Liquor Atropinæ Sulphatis
- Liquor Morphinæ Acetatis
- Liquor Morphinæ Hydrochloratis
- Liquor Potassii Permanganatis
- Liquor Sodii Arseniatis
- Liquor Strychninæ Hydrochloratis

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THE
BRITISH PHARMACOPŒIA.

ACACIÆ GUMMI.

Gum Acacia.

A gummy exudation from the stem and branches of Acacia Senegal, *Willd.* (A. Verek, *Guill. et Perr.*); *Bentl. and Trim. Med. Pl.* vol. ii. plate 94; and from other species of Acacia, *Willd.*

Characters and Tests.—In roundish, ovoid, or vermicular tears, or masses, of various sizes; or in angular fragments with glistening surfaces; colourless, or with a yellowish, brownish, or reddish tint. The tears either opaque from numerous minute fissures and very brittle, or more or less transparent and not readily broken; the fractured surfaces vitreous in appearance. Taste bland and mucilaginous; without odour; insoluble in alcohol, but entirely soluble in water, and forming a clear mucilaginous solution. The aqueous solution forms with subacetate of lead an opaque white jelly. If an aqueous solution of iodine be added to the powder, or to a solution formed with boiling water and cooled, there is no appearance of a violet or blue colour.

Preparations containing Gum Acacia.

Mistura Cretæ	1	part in	34
,, Guaiaci	1	,,	85
Mucilago Acaciæ	1	,,	2½
Pulvis Amygdalæ Compositus	1	,,	13
,, Tragacanthæ Compositus	1	,,	6
Trochisci, in all.			

ACETUM.

Vinegar.

An acid liquid, prepared from a mixture of malted and unmalted grain by the acetous fermentation.

Characters and Tests.—A liquid of a brown colour and peculiar odour. Specific gravity 1·017 to 1·019. 445·4 grains by weight (1 fluid ounce) of it require about 402 grain-measures of the volumetric solution of soda for their neutralisation, corresponding to 5·41 per cent. of real acetic acid, $HC_2H_3O_2$. If ten minims of solution of chloride of barium be added to a fluid ounce of the vinegar, and the precipitate, if any, be separated by filtration, a further addition of the test should give no precipitate. Sulphuretted hydrogen causes no change of colour.

Dose.—1 fluid drachm to 1 fluid ounce.

Preparation in which Vinegar is used.

Emplastrum Saponis Fuscum.

ACETUM CANTHARIDIS.

Vinegar of Cantharides.

Take of

Cantharides, bruised	2 ounces	or .	1 part
Glacial Acetic Acid .	2 fluid ounces .	,, .	1 fluid part
Acetic Acid, sufficient for . . .	20 fluid ounces .	,, .	10 fluid parts

Mix thirteen fluid ounces of the acetic acid with the glacial acetic acid, and digest the cantharides in this mixture for two hours at a temperature of 200° F. (93°·3 C.); then transfer the ingredients, after they have cooled, to a percolator, and when the liquid ceases to pass pour five fluid ounces of acetic acid over the residuum in the apparatus. As soon as the percolation is complete, subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient acetic acid to make one pint. Specific gravity about 1·060.

ACETUM SCILLÆ.

Vinegar of Squill.

Take of

Squill, bruised . .	2½ ounces . .	or . .	1 part
Diluted Acetic Acid .	1 pint	„ . .	8 fluid parts

Macerate the squill in the acetic acid for seven days, then strain with expression, and filter. Specific gravity about 1·038.

Dose.—15 to 40 minims.

Preparations in which Vinegar of Squill is used.

Oxymel Scillæ | Syrupus Scillæ

ACIDUM ACETICUM.

Acetic Acid.

An acid liquid obtained from wood by destructive distillation and subsequently purified. 100 parts by weight contain 33 parts of real acetic acid, $HC_2H_3O_2$.

Characters and Tests.—A colourless liquid having a strong acid reaction and a pungent odour. Specific gravity 1·044. 182 grains by weight require for neutralisation 1000 grain-measures of the volumetric solution of soda. It leaves no residue when evaporated, and gives no precipitate with sulphuretted hydrogen, chloride of barium, or nitrate of silver. If a fluid drachm of it mixed with half an ounce of distilled water and half a drachm of pure hydrochloric acid be put into a small flask with a few pieces of granulated zinc, and while the effervescence continues a slip of bibulous paper moistened with solution of subacetate of lead be suspended in the upper part of the flask above the liquid for about five minutes, the paper will not become discoloured.

Preparations containing free Acetic Acid.

Acetum	5·41 per cent. of real acetic acid
,, Cantharidis	
,, Scillæ	
Acidum Aceticum Glaciale .	98·8 per cent. of real acetic acid
,, Aceticum . .	33·0 per cent. do.
,, ,, Dilutum .	4·27 per cent. do.
Extractum Colchici Aceticum	
Mistura Creasoti	
Oxymel	
,, Scillæ	
Syrupus Scillæ	
Tinctura Ferri Acetatis	

Official Acetates.

Æther Aceticus
Ammonii Acetatis, Liquor
,, ,, Liquor Fortior
Ferri Acetatis, Liquor
,, ,, Liquor Fortior
,, ,, Tinctura
Morphinæ Acetas
,, Acetatis, Liquor
Plumbi Acetas
,, Subacetatis, Liquor
,, ,, Liquor Dilutus
Potassii Acetas
Zinci Acetas

ACIDUM ACETICUM DILUTUM.

Diluted Acetic Acid.

Take of

Acetic Acid . .	1 pint	. . or . .	1 fluid part
Distilled Water .	7 pints	. . ,, . .	7 fluid parts

Mix.

Tests.—Specific gravity 1·006. 440 grains by weight (1 fluid ounce) require for neutralisation 313 grain-measures of the volumetric solution of soda, corresponding to 4·27 per cent. of real acetic acid, $HC_2H_3O_2$. One fluid ounce therefore contains nearly 19 grains of real acetic acid.

Dose.—1 fluid drachm to 1 fluid ounce.

Preparations in which Diluted Acetic Acid is used.

Acetum Scillæ | Liquor Morphinæ Acetatis

ACIDUM ACETICUM GLACIALE.

Glacial Acetic Acid.

Concentrated acetic acid, containing nearly 99 per cent. of real acid, $HC_2H_3O_2$.

Characters and Tests.—It crystallises when cooled, and remains crystalline until the temperature rises to above 60° F. (15°·5 C.) Specific gravity 1·058, and this is increased by adding ten per cent. of water. At the mean temperature of the air it is a colourless liquid, with a pungent acetous odour. 60 grains by weight mixed with a fluid ounce of distilled water require for neutralisation at least 990 grain-measures of the volumetric solution of soda. If a fluid drachm of it mixed with half an ounce of distilled water and half a drachm of pure hydrochloric acid be put into a small flask with a few pieces of granulated zinc, and while the effervescence continues a slip of bibulous paper moistened with solution of subacetate of lead be suspended in the upper part of the flask above the liquid for about five minutes, the paper will not become discoloured.

Preparations in which Glacial Acetic Acid is used.

Acetum Cantharidis | Mistura Creasoti
Linimentum Terebinthinæ Aceticum

ACIDUM ARSENIOSUM.

Arsenious Acid.

Synonyms.—Arsenic; Arsenicum Album; White Arsenic; Anhydrous Arsenious Acid; Arsenious Anhydride.

As_2O_3.

An anhydride (not a true acid) obtained by roasting arsenical ores, and purified by sublimation.

Characters and Tests.—Occurs as a heavy white powder, or in sublimed masses which usually present a stratified appearance caused by the existence of separate layers differing from each other in degrees of opacity. When slowly sublimed in a glass tube it forms minute brilliant and transparent crystals of octahedral character. It is sparingly soluble in cold water, more soluble in boiling water, and its solution, which is odourless and tasteless, gives with ammonio-nitrate of silver a canary-yellow precipitate insoluble in water but readily dissolved by ammonia and by nitric acid. Sprinkled on a red-hot coal, it emits an alliaceous odour. It is entirely volatilised at a temperature not exceeding 400° F. (204°·4 C.) Four grains of it dissolved in boiling water with about twenty grains of bicarbonate of sodium, discharge the colour of 808 grain-measures of the volumetric solution of iodine.

Dose.—$\frac{1}{60}$ to $\frac{1}{12}$ grain.

Preparations in which Arsenious Anhydride is used.

Liquor Arsenicalis . . .	1 grain in 100 fluid grains
,, Arsenici Hydrochloricus	1 grain in 100 fluid grains

Official Arseniates.

Ferri Arsenias | Sodii Arsenias
Sodii Arseniatis, Liquor

ACIDUM BENZOICUM.

Benzoic Acid.

$HC_7H_5O_2$.

An acid obtained from benzoin, and prepared by sublimation. Not chemically pure.

Characters and Tests.—In light feathery crystalline plates and needles, which are flexible, nearly colourless, and have an agreeable aromatic odour, resembling that of benzoin. It is sparingly soluble in water, but readily in rectified spirit; soluble also in solutions of the alkalies and of lime, forming benzoates, and it is precipitated from these on the addition of hydrochloric acid unless the solution be very dilute. It melts at 248° F. (120° C.), and boils at 462° F. (238°·9 C.) When heated to the last-named temperature, it passes off in vapour, leaving only a slight residue.

Dose.—10 to 15 grains.

Preparations.

Tinctura Camphoræ Composita .	2 grains in 1 fluid ounce
,, Opii Ammoniata . .	9 grains in 1 fluid ounce
Trochisci Acidi Benzoici . .	½ grain in each lozenge

Official Benzoate.—Ammonii Benzoas.

ACIDUM BORICUM.

Boric Acid.

Synonym.—Boracic Acid.

H_3BO_3.

A weak acid obtained by the action of sulphuric acid on borax, and by the purification of native boric acid.

Characters and Tests.—Colourless, pearly, lamellar crystals or irregular masses of crystals; easily powdered; unctuous to the touch; taste feebly sour and bitter and leaving a sweetish after-flavour in the mouth. Soluble in 25 parts of water, 5 of glycerine, 16 of rectified spirit at 60° F. (15°·5 C.), and in 3 of boiling water. It changes the colour of litmus to wine-red; turmeric paper moistened with an aqueous solution slightly acidified with hydrochloric acid, becomes brownish red on gently drying, and this colour changes to a greenish if solution of potash be added. The alcoholic solution burns with a flame tinged with green. The crystals liquefy when warmed, and on careful ignition lose 43½ per cent. of their weight, the product solidifying, on cooling, to a brittle glass-like mass. The aqueous solution should not yield more than a faint opalescence with chloride of barium, nitrate of silver, or oxalate of ammonium; nor afford any precipitate with sulphydrate of ammonium; nor give a strong persistent yellow tinge to a spirit flame or air-gas flame.

Dose.—5 to 30 grains.

Preparation.—Unguentum Acidi Borici.

ACIDUM CARBOLICUM.

Carbolic Acid.

Synonyms.—Phenic Acid; Phenol; Phenic Alcohol.

HC_6H_5O.

An acid obtained from coal-tar oil by fractional distillation and subsequent purification.

Characters and Tests.—In separate pulverulent crystals having a peculiar taste and odour, or in acicular crystalline masses; colourless, or having a very slight reddish or brownish tinge; boiling point not higher than 371° F. (188°·3 C.), and melting point not lower than 91°·5 F. (33° C.) Specific gravity at the melting point, 1·060 to 1·066. At 60° F. (15°·5 C.), 100 parts of the acid are liquefied by the addition of 5 to 10 parts of water; dissolve 30 to 40 of water, and are dissolved by 1,800 to 1,200 of water; the former and latter of these numbers being respectively characteristic of the acicular and pulverulent varieties of the acid. The aqueous solution should be clear and colourless, or nearly so; any insoluble brown matter separating as dark oily drops which should not have more than a faint tarry odour. Carbolic acid is freely soluble in alcohol, ether, benzol, chloroform, disulphide of carbon, glycerine, or glycerine and water, and in solutions of alkalies. It does not redden blue litmus paper. It coagulates albumen. It does not affect the plane of polarisation of a ray of polarised light. Neutral solution of perchloride of iron strikes a deep purple colour, and bromine water gives a white precipitate with a cold saturated aqueous solution of carbolic acid. Solution of ammonia and of chlorinated soda produce a deep purple coloration, especially after a time.

Dose.—1 to 3 grains.

Preparations.

Acidum Carbolicum Liquefactum .	about 90 per cent.
Glycerinum Acidi Carbolici . .	1 part in 6 by weight
Suppositoria Acidi Carbolici cum Sapone	about 1 in 20
Unguentum Acidi Carbolici	

ACIDUM CARBOLICUM LIQUEFACTUM.

Liquefied Carbolic Acid.

Carbolic acid liquefied by the addition of 10 per cent. of water.

Characters and Tests.—A colourless or very slightly reddish or brownish liquid having the taste, odour, &c., of carbolic acid. Specific gravity 1·064 to 1·067 at 60° F. (15°·5 C.) Boiling point gradually rising to a temperature not higher than 371° F. (188°·8 C.) It dissolves 18 to 26 per cent. of water at 60° F. (15°·5 C.), yielding a clear or nearly clear solution, from which any slight coloured impurity contained previously in the acid separates as dark oily drops.

Dose.—1 to 4 minims.

ACIDUM CHROMICUM.

Chromic Acid.

Synonyms.—Anhydrous Chromic Acid; Chromic Anhydride.

CrO_3.

An anhydride (not a true acid). It may be obtained by the following process:—

Take of

Bichromate of Potassium . .	30 ounces
Sulphuric Acid	57 fluid ounces
Distilled Water	a sufficiency

Dissolve the bichromate of potassium in a mixture of 50 fluid ounces of the water and 42 fluid ounces of the acid. Set aside for twelve hours, and decant the liquor from the crystals of acid sulphate of potassium that have separated. Heat the liquor to about 185° F. (85° C.), and add the remainder of the acid, and water sufficient to just redissolve any crystals of chromic acid that may have been formed. Allow to cool, collect and drain the crystals, and dry them on porous tiles at a temperature not exceeding 100° F. (37°·8 C.) in an air bath. From the mother liquor more crystals may be obtained on evaporation.

Characters and Tests.—Crimson acicular crystals, very deliquescent, inodorous, corrosively caustic to the skin. At a high temperature it melts, and at a still higher temperature decomposes, with the evolution of oxygen gas, leaving a greenish-black residue. Warmed with hydrochloric acid, chlorine is evolved. Mixed with cold alcohol, aldehyd is evolved, and a green residue remains. It is soluble in water, yielding a deep orange-red solution. If placed in contact with alcohol, glycerine, and some other organic matters, sudden combustion or explosion may ensue. One or two grains dissolved in two or three ounces of water should afford only a faint opalescence with chloride of barium.

Preparation.

Liquor Acidi Chromici	1 part in 4

ACIDUM CITRICUM.

Citric Acid.

$H_3C_6H_5O_7,H_2O$.

An acid prepared from lemon-juice, or from the juice of the fruit of Citrus Bergamia, *Risso and Poit.* (Citrus Limetta, *DC.*), the Lime. It may be obtained by the following process :—

Take of

Lemon Juice	4 pints
Prepared Chalk	4½ ounces
Sulphuric Acid	2½ fluid ounces
Distilled Water	a sufficiency

Heat the lemon juice to its boiling point and add the chalk by degrees till there is no more effervescence. Collect the deposit on a calico filter, and wash it with hot water till the filtered liquor passes from it colourless. Mix the deposit with a pint of distilled water, and gradually add the sulphuric acid previously diluted with a pint and a half of distilled water. Boil gently for half an hour, keeping the mixture constantly stirred. Separate the acid solution by filtration, wash the insoluble matter with a little distilled water, and add the washings to the solution. Concentrate this solution to the density of 1·21, then allow it to cool, and after twenty-four hours decant the liquor from the crystals of sulphate of calcium which will have formed; further concentrate the liquor until a film forms on its surface, and set it aside to cool and crystallise. Purify the crystals if necessary by recrystallisation.

Characters and Tests.—In colourless crystals, of which the right rhombic prism is the primary form; very soluble in water, less soluble in rectified spirit, and insoluble in pure ether. The crystals dissolve in three-fourths of their weight of cold, and in half their weight of boiling water. The diluted aqueous solution has an agreeable acid taste. When the solution is made by dissolving about forty grains of the acid in one ounce of water, it resembles lemon juice in strength and in the nature of its acid properties, and, like lemon juice, it undergoes decomposition and becomes mouldy by keeping. The aqueous solution is not darkened by sulphuretted hydrogen, gives no precipitate when added in excess to solution of acetate of potassium, or of chloride of barium, and if sparingly added to cold lime water it does not render it turbid. The crystals leave no ash when burned with free access of air. Seventy grains of the acid dissolved in distilled water are neutralised by 1000 grain-measures of the volumetric solution of soda.

Dose.—10 to 30 grains.

Preparations containing free Citric Acid.

Succus Limonis | Syrupus Limonis
Vinum Quininæ

Official Citrates.

Ammonii Citratis, Liquor Fortior
Bismuthi Citras
,, et Ammonii Citratis, Liquor
Ferri et Ammonii Citras
,, ,, Quininæ Citras
Lithii Citras
Potassii Citras
Sodii Citro-tartras Effervescens

ACIDUM GALLICUM.

Gallic Acid.

$H_3C_7H_3O_5,H_2O$.

An acid prepared from galls. It may be obtained by the following process:—

Boil one part of coarsely powdered galls with four fluid parts of diluted sulphuric acid for half an hour, then strain through calico while hot; collect the crystals that are deposited on cooling, and purify these with animal charcoal and repeated crystallisation.

Characters and Tests.—Crystalline, in acicular prisms or silky needles, sometimes nearly white, but generally of a pale fawn colour. It requires about 100 parts of cold water for its solution, but dissolves in 3 parts of boiling water. Soluble also in rectified spirit. The aqueous solution gives no precipitate with solution of isinglass. It gives a bluish-black precipitate with a persalt of iron. The crystalline acid when dried at 212° F. (100° C.) loses 9·5 per cent. of its weight. It leaves no residue when burned with free access of air.

Dose.—2 to 10 grains.

Preparation.

Glycerinum Acidi Gallici .	1 part in 6 by weight

ACIDUM HYDROBROMICUM DILUTUM.

Diluted Hydrobromic Acid.

An aqueous solution containing 10 per cent. by weight of gaseous or real hydrobromic acid, HBr It may be obtained by the following process:—

Take of

Bromine	1 fluid ounce
Distilled Water . . .	of each a sufficiency
Sulphuretted Hydrogen. .	

Place the bromine in a glass cylinder and pour over it 15 ounces of the water. Pass a current of sulphuretted hydrogen gas into the bromine until the red colour of the aqueous liquid has disappeared. Filter the fluid, and distil the filtrate. Reject the distillate until it is free from odour of sulphuretted compounds, and then collect it until sulphuric acid begins to distil. Dilute the distilled acid with water until it has a specific gravity at 60° F. (15°·5 C.) of 1·077. Preserve in glass-stoppered bottles.

From the rejected distillate more hydrobromic acid may be obtained by redistillation.

Characters and Tests.—A colourless, inodorous liquid, having a sour taste and acid reaction. Evaporated to dryness, it leaves little or no residue. Chlorine water liberates bromine, colouring the fluid yellow. With nitrate of silver it yields a white curdy precipitate insoluble in nitric acid, and only sparingly soluble in solution of ammonia; no precipitate with chloride of barium; and does not become discoloured on keeping. 810 grains by weight require for neutralisation 1000 grain-measures of the volumetric solution of soda.

Dose.—15 to 50 minims.

ACIDUM HYDROCHLORICUM.

Hydrochloric Acid.

Synonym.—Muriatic Acid.

Hydrochloric acid gas, HCl, dissolved in water, and forming about 32 per cent. by weight of the solution. It may be obtained by the following process:—

Take of

Chloride of Sodium, dried . .	48 ounces
Sulphuric Acid	44 fluid ounces
Water	36 fluid ounces
Distilled Water	50 fluid ounces

Pour the sulphuric acid slowly into thirty-two ounces of the water, and when the mixture has cooled, add it to the chloride of sodium previously introduced into a flask having the capacity of at least one gallon. Connect the flask by corks and a bent glass tube with a three-necked wash-bottle, furnished with a safety-tube, and containing the remaining four ounces of the water; then, applying heat to the flask, conduct the disengaged gas through the wash-bottle into a second bottle containing the distilled water, by means of a bent tube dipping about half an inch below the surface, and let the process be continued until the product measures sixty-six ounces, or the liquid has acquired a specific gravity of 1·16. The bottle containing the distilled water must be kept cool during the whole operation.

Characters and Tests.—A nearly colourless and strongly acid liquid, emitting white vapours having a pungent odour. Specific gravity 1·160. When evaporated to dryness, it leaves no residue. It gives with nitrate of silver a curdy white precipitate, soluble in excess of ammonia, insoluble in nitric acid. 114·8 grains by weight, mixed with half an ounce of distilled water, require for neutralisation 1000 grain-measures of the volumetric solution of soda. When diluted with four times its volume of distilled water, it gives no precipitate with solution of chloride of barium or with sulphuretted hydrogen, and, even when boiling, it does not tarnish or alter the colour of bright copper foil. If a fluid drachm of it mixed with half an ounce of distilled water be put into a small flask with a few pieces of granulated zinc, and while the effervescence continues a slip of bibulous paper wetted with solution of subacetate of lead be suspended in the upper part of the flask above the liquid for about five minutes, the paper will not become discoloured. If a drop or two of dilute solution of sulphate of indigo be added to half an ounce of the acid, the latter should acquire a permanent blue tint.

Preparations containing free Hydrochloric Acid.

Acidum Hydrochloricum Dilutum
,, Nitro-hydrochloricum Dilutum
Liquor Antimonii Chloridi
,, Arsenici Hydrochloricus
,, Morphinæ Hydrochloratis

Official Chlorides.

Ammonii Chloridum
Antimonii Chloridi, Liquor
Arsenici, Liquor Hydrochloricus
Calcii Chloridum
Ferri Perchloridi, Liquor
,, ,, Liquor Fortior
Hydrargyri Perchloridum
Hydrargyri Perchloridi, Liquor
,, Subchloridum
Morphinæ Hydrochloras
,, Hydrochloratis, Liquor
Sodii Chloridum
Tinctura Ferri Perchloridi
Zinci Chloridum
,, Chloridi, Liquor

ACIDUM HYDROCHLORICUM DILUTUM.

Diluted Hydrochloric Acid.

Take of

Hydrochloric Acid	8 fluid ounces
Distilled Water	a sufficiency

Dilute the acid with sixteen ounces of the water, then add more water, so that at a temperature of 60° F. (15°·5 C.) it shall measure 26½ fluid ounces.

Or as follows:

Take of

Hydrochloric Acid	3060 grains
Distilled Water	a sufficiency

Weigh the acid in a glass flask the capacity of which, to a mark on the neck, is one pint, then add distilled water until the mixture, at 60° F. (15°·5 C.), after it has been shaken, measures a pint.

Tests.—Specific gravity 1·052. 345 grains by weight (6 fluid drachms) require for neutralisation 1000 grain-measures of the volumetric solution of soda, corresponding to 10·58 per cent. of real acid. Six fluid drachms contain one molecular weight in grains (36·5) of hydrochloric acid, HCl.

Dose.—10 to 30 minims.

Preparations for which Diluted Hydrochloric Acid is used.

Liquor Morphinæ Hydrochloratis
,, Strychninæ ,,

ACIDUM HYDROCYANICUM DILUTUM.

Diluted Hydrocyanic Acid.

Hydrocyanic acid, HCN, dissolved in water, and constituting 2 per cent. by weight of the solution.

Take of

Ferrocyanide of Potassium	2¼ ounces
Sulphuric Acid	1 fluid ounce
Distilled Water	30 fluid ounces, or a sufficiency

Dissolve the ferrocyanide of potassium in ten ounces of the water, then add the sulphuric acid, previously diluted with four ounces of the water and cooled. Put the solution into a flask or other suitable apparatus of glass or earthenware, to which are attached a condenser and a receiver arranged for distillation; and having put eight ounces of distilled water into the receiver, and provided efficient means for keeping the condenser and receiver cold, apply heat to the flask, until by slow distillation the liquid in the receiver is increased to seventeen fluid ounces. Add to this three ounces of distilled water, or as much as may be sufficient to bring the acid to the required strength, so that one hundred grains (or 110 minims) of it, precipitated with a solution of nitrate of silver, and the precipitate thoroughly washed and dried, shall yield ten grains of dry cyanide of silver.

Diluted hydrocyanic acid should be kept in well-corked bottles, tied over with impervious tissue. The bottles should be inverted when not in use, and be kept in a dark place.

Characters and Tests.—A colourless liquid with a peculiar odour. Specific gravity 0·997. It only slightly and transiently reddens litmus paper. A fluid drachm of it evaporated in a platinum dish leaves no fixed residue. Treated with a minute quantity of a mixed solution of sulphate and persulphate of iron, afterwards with potash, and finally acidulated with hydrochloric acid, it forms Prussian blue. It gives no precipitate with chloride of barium, but with nitrate of silver it yields a white precipitate entirely soluble in boiling concentrated nitric acid. 270 grains of it, to which solution of litmus is added, the fluid being rendered alkaline by the addition of solution of soda and maintained faintly alkaline throughout the operation—which should be performed speedily so as to prevent loss of acid by volatilisation—require 1000 grain-measures of the volumetric solution of nitrate of silver to be added before a permanent precipitate begins to form, which corresponds to two per cent. of the real acid, HCN.

Dose.—2 to 8 minims.

Preparations.

Vapor Acidi Hydrocyanici

Tinctura Chloroformi et Morphinæ . 1 volume in 16

ACIDUM LACTICUM.

Lactic Acid.

Lactic acid, $HC_3H_5O_3$, with about 25 per cent. of water. Produced by the action of a peculiar ferment on solution of sugar and subsequent purification of the product.

Characters and Tests.—A colourless syrupy liquid, inodorous, with a pure acid taste, and acid reaction on litmus. Specific gravity 1·21. Miscible in all proportions with water, rectified spirit, and ether, nearly insoluble in chloroform. Warmed with permanganate of potassium, it gives the odour of aldehyd. It vaporises when heated, and yields inflammable gases when the temperature is about 350° F. (176°·7 C.), at first burning with a blue flame which becomes more luminous as the temperature rises. When nearly all dissipated, the residue chars, and finally almost entirely disappears. A solution in about ten parts of water, neutralised by ammonia, is not precipitated by sulphydrate of ammonium. Not more than a faint opalescence is produced with chloride of barium, nitrate of silver, or oxalate of ammonium, nor when boiled with excess of Fehling's solution is any precipitate formed.

120 grains require for neutralisation 1000 grain-measures of volumetric solution of soda.

Preparation.

Acidum Lacticum Dilutum .	15 fluid parts in 100

ACIDUM LACTICUM DILUTUM.

Diluted Lactic Acid.

Take of

Lactic Acid . . .	8 fluid ounces
Distilled Water . .	sufficient to produce 1 pint

Mix.

Dose.—½ to 2 fluid drachms.

Tests.—Specific gravity 1·040. 800 grains by weight require for neutralisation 1000 grain-measures of volumetric solution of soda.

ACIDUM MECONICUM.

Meconic Acid.

$H_3C_7HO_7$.

An acid obtained from opium.

Characters and Tests.—In micaceous crystals, nearly colourless, sparingly soluble in water, readily soluble in alcohol. The solution in water has a strongly acid taste and reaction, and is coloured red by neutral solution of perchloride of iron, the colour being discharged by strong but not by diluted hydrochloric acid. The aqueous solution gives no precipitate with solution of iodine and iodide of potassium.

Official Meconate.—Liquor Morphinæ Bimeconatis.

ACIDUM NITRICUM.

Nitric Acid.

An acid prepared from nitrate of potassium or nitrate of sodium by distillation with sulphuric acid and water,

and containing 70 per cent. by weight of real nitric acid, HNO_3.

Characters and Tests.—A colourless liquid, having a specific gravity of 1·42. When exposed to the air it emits an acrid, corrosive vapour. If it be poured over copper filings, dense red vapours are immediately formed; but if the acid be mixed with an equal volume of water, and then added to the copper, it gives off a colourless gas, which acquires an orange-red colour as it mixes with the air, and which, if it be introduced into a solution of sulphate of iron, communicates a dark purple or brown colour. The boiling point of the acid is 250° F. (121° C.) If submitted to distillation the product continues uniform throughout the process. It leaves little or no residue when evaporated to dryness. Diluted with six times its volume of distilled water, it gives no precipitate with chloride of barium or nitrate of silver. 90 grains by weight of it mixed with half an ounce of distilled water require for neutralisation 1000 grain-measures of the volumetric solution of soda.

Preparations containing free Nitric Acid.

Acidum Nitricum Dilutum
,, Nitro-hydrochloricum Dilutum
Liquor Ferri Pernitratis
,, Hydrargyri Nitratis Acidus
Unguentum Hydrargyri Nitratis

Official Nitrates.

Argenti Nitras
Bismuthi Subnitras
Ferri Pernitratis, Liquor
Plumbi Nitras
Potassii Nitras
Sodii Nitras
Hydrargyri Nitratis, Liquor Acidus

ACIDUM NITRICUM DILUTUM.

Diluted Nitric Acid.

Take of

Nitric Acid	6 fluid ounces
Distilled Water	a sufficiency

Dilute the acid with 24 fluid ounces of the water, then add more water, so that at a temperature of 60° F. (15°·5 C.) it shall measure 31 fluid ounces.

Or as follows:

Take of

Nitric Acid	2400 grains
Distilled Water	a sufficiency

Weigh the acid in a glass flask the capacity of which, to a mark on the neck, is one pint, then add distilled water until the mixture, at 60° F. (15°·5 C.) temperature, after it has been shaken, measures a pint.

Characters and Tests.—Colourless. Specific gravity 1·101. 361·3 grains by weight (6 fluid drachms) require for neutralisation 1000 grain-measures of the volumetric solution of soda, corresponding to 17·44 per cent. of real nitric acid. Six fluid drachms therefore correspond to one molecular weight in grains of real nitric acid, HNO_3.

Dose.—10 to 30 minims.

ACIDUM NITRO-HYDROCHLORICUM DILUTUM.

Diluted Nitro-hydrochloric Acid.

Contains free chlorine, hydrochloric, nitric, and nitrous acids, and other compounds, dissolved in water.

Take of

Nitric Acid	3 fluid ounces
Hydrochloric Acid. . . .	4 fluid ounces
Distilled Water	25 fluid ounces

Add the acids to the water, and keep the mixture in a glass-stoppered bottle for fourteen days before it is used.

Characters and Tests.—Colourless. Specific gravity 1·07. 352 grains by weight (6 fluid drachms) require for neutralisation about 383 grain-measures of the volumetric solution of soda.

Dose.—5 to 20 minims.

ACIDUM OLEICUM.

Oleic Acid.

A fluid fatty acid, $HC_{18}H_{33}O_2$, obtained by the saponification of olein, or by the action of superheated steam on fats with subsequent separation from solid fats by pressure. Usually not quite pure.

Characters and Tests.—A straw-coloured liquid, nearly odourless and tasteless, and with not more than a very faint acid reaction. Unduly exposed to air it becomes brown and decidedly acid. Specific gravity 0·860 to 0·890. It is insoluble in water, but readily soluble in alcohol, chloroform, and ether. At 40° to 41° F. (4°·5 to 5° C.) it becomes semi-solid, melting again at 56° to 60° F. (13°·3 to 15°·5 C.) It should be completely saponified when warmed with carbonate of potassium, and an aqueous solution of this salt neutralised by acetic acid and treated with acetate of lead should yield a precipitate which after washing with boiling water is almost entirely soluble in ether.

Preparations containing Oleates and Oleic Acid.

Oleatum Hydrargyri
Oleatum Zinci
Unguentum Zinci Oleati

ACIDUM PHOSPHORICUM CONCENTRATUM.

Concentrated Phosphoric Acid.

Phosphoric acid, H_3PO_4, with 33·7 per cent. of water. It may be obtained by the following process:—

Take of

Phosphorus	413 grains
Nitric Acid	6 fluid ounces
Distilled Water	a sufficiency

Put the nitric acid diluted with eight ounces of distilled water into a glass flask, the mouth of which may be connected with a vertical glass condenser; and having added the phosphorus and connected the condenser, boil the contents at such a rate that all condensed products shall return to the flask. Continue the action until the phosphorus has entirely disappeared. Remove the condenser and concentrate the fluid, either in the flask or in a porcelain dish of hard well-enamelled ware, until it is reduced to four fluid ounces; then, transferring it to a platinum vessel, continue the evaporation until it is reduced to about two fluid ounces, and orange-coloured vapours are no longer formed. Mix it now with distilled water until when cold it measures three fluid ounces, and has a specific gravity of 1·5.

Phosphoric acid may also be prepared from phosphorus by treatment of the product of atmospheric oxidation with water and a little nitric acid.

Characters and Tests.—A colourless syrupy liquid with a sour taste and strongly acid reaction. With ammonio-nitrate of silver its diluted solution gives a canary-yellow precipitate soluble in ammonia and in diluted nitric acid. Evaporated it leaves a residue which melts at a low red heat, and upon cooling exhibits a glassy appearance. After dilution it is not precipitated by sulphuretted hydrogen passed through the hot solution for a few minutes, nor by chloride of barium, nitrate of silver acidulated with nitric acid, or solution of albumen; and if neutralised by ammonia, and then a slight excess of acetic acid added, oxalate of ammonium does not immediately cause turbidity. When mixed with an equal volume of pure sulphuric acid, and then introduced into solution of sulphate of iron, it does not communicate to it a dark colour. Diluted and mixed with an equal volume of solution of perchloride of mercury and heated, no precipitate is formed. 73·8 grains by weight of it mixed with 180 grains of oxide of lead in fine powder leave by evaporation a residue (principally phosphate of lead) which after it has been heated to dull redness weighs 215·5 grains.

Dose.—2 to 5 minims.

Preparations containing Phosphoric Acid.

Acidum Phosphoricum Dilutum | Syrupus Ferri Phosphatis

NAWAB SALAR JUNG BAHADUR,

Official Phosphates.

Ammonii Phosphas	Ferri Phosphas
Calcii Phosphas	Sodii Phosphas

ACIDUM PHOSPHORICUM DILUTUM.

Diluted Phosphoric Acid.

Phosphoric acid, H_3PO_4, in solution in water to the extent of 13·8 per cent. by weight, corresponding to 10 per cent. of phosphoric anhydride, P_2O_5.

Take of

Concentrated Phosphoric Acid .	3 fluid ounces
Distilled Water	a sufficiency to form 20 fluid ounces

Mix.

Characters and Tests.—A colourless liquid of specific gravity 1·08. 355 grains of it (six fluid drachms) mixed with 180 grains of oxide of lead in fine powder leave by evaporation a residue (principally phosphate of lead) which after it has been heated to dull redness weighs 215·5 grains. Six fluid drachms contain one half of the molecular weight of phosphoric acid in grains, 49 ($H_3PO_4=98$); equivalent to one fourth of the molecular weight of phosphoric anhydride in grains, 35·5 ($P_2O_5=142$). Its other characters and tests resemble those described in connection with concentrated phosphoric acid.

Diluted phosphoric acid may be prepared from a concentrated acid of any strength other than that described, provided the product have a specific gravity of 1·08, and respond to the other characters and tests already enumerated.

Dose.—10 to 30 minims.

ACIDUM SALICYLICUM.

Salicylic Acid.

$HC_7H_5O_3$.

A crystalline acid obtained by the combination of the elements of carbolic acid with those of carbonic acid gas and subsequent purification, or from natural salicylates such as the oils of wintergreen (Gaultheria procumbens, *Linn.*) and sweet birch (Betula lenta, *Linn.*)

Characters and Tests.—In white acicular crystals, inodorous but light and easily diffused and then irritating to the nostrils; taste at first sweetish then acid. It is soluble in 500 to 700 parts of water at ordinary temperatures; readily soluble in alcohol, ether, and hot water; soluble also in solutions of citrate or acetate of ammonium, phosphate of sodium, or borax. The crystals melt at about 311° F. (155° C.), and below 392° F. (200° C.) volatilise without decomposition. The aqueous solution gives with solution of perchloride of iron a reddish-violet colour. An alcoholic solution allowed to evaporate spontaneously should leave a perfectly white residue.

Dose.—5 to 30 grains.

Preparation.—Unguentum Acidi Salicylici.

Official Salicylate.—Sodii Salicylas.

ACIDUM SULPHURICUM.

Sulphuric Acid.

An acid produced by the combustion of sulphur and the oxidation and hydration of the resulting sulphurous acid gas by means of nitrous and aqueous vapours. It contains about 98 per cent. by weight of real sulphuric acid, H_2SO_4.

Characters and Tests.—A colourless liquid of oily consistence, intensely acid and corrosive. Specific gravity 1·843. It evolves much heat on the addition of water, and when thus diluted gives a copious precipitate with chloride of barium. 50 grains by weight, mixed with an ounce of distilled water, require for neutralisation 1000 grain-measures of the volumetric solution of soda. Evaporated in a platinum dish, it leaves little or no residue. When a solution of sulphate of iron is carefully poured over its surface, there is no purple colour developed where the two liquids unite. If a few drops be mixed with about a quarter of an ounce of a solution of stannous chloride mixed with strong hydrochloric acid, and the mixture be heated to boiling and then be allowed to cool, no darkening in colour and no precipitate should be produced.

Preparations containing free Sulphuric Acid.

Acidum Sulphuricum Aromaticum
,, ,, Dilutum
Infusum Rosæ Acidum

Official Sulphates.

Alumen
,, Exsiccatum
Atropinæ Sulphas
Beberinæ Sulphas
Cupri Sulphas
Ferri Persulphatis, Liquor
,, Sulphas
Ferri Sulphas Exsiccata
,, ,, Granulata
Hydrargyri Sulphas
Magnesii Sulphas
Potassii Sulphas
Quininæ Sulphas
Sodii Sulphas
Zinci Sulphas

ACIDUM SULPHURICUM AROMATICUM.

Aromatic Sulphuric Acid.

Take of

Strong Tincture of Ginger	2 fl. ozs.	. . . or	. 1 fl. part
Spirit of Cinnamon . .	2 fl. ozs.	. . . ,,	. 1 fl. part
Rectified Spirit. . .	36 fl. ozs.	. . ,,	. 18 fl. parts
Sulphuric Acid . .	3 fl. ozs. or 2419 grs.	,,	. 1½ fl. part

Mix the sulphuric acid gradually with the spirit, and add the spirit of cinnamon and tincture of ginger.

Tests.—Specific gravity 0·911. 195 grains by weight require for neutralisation 500 grain-measures of the volumetric solution of soda, corresponding to about 12·5 per cent. of real sulphuric acid. Six fluid drachms contain about 37·5 grains of real acid, H_2SO_4.

Dose.—5 to 30 minims.

Preparation containing Aromatic Sulphuric Acid.

Infusum Cinchonæ Acidum .	1 fluid part to 80 fluid parts

ACIDUM SULPHURICUM DILUTUM.

Diluted Sulphuric Acid.

Take of

Sulphuric Acid	7 fluid ounces
Distilled Water	a sufficiency

Dilute the acid with 77 fluid ounces of the water, and when the mixture has cooled to 60° F. (15°·5 C.) add more water, so that it shall measure 83½ fluid ounces. Set the mixture aside and decant from any sediment.

Or as follows:

Take of

Sulphuric Acid	1350 grains
Distilled Water	a sufficiency

Weigh the acid in a glass flask the capacity of which, to a mark on the neck, is one pint, then gradually add distilled water until the mixture, after it has been shaken and cooled to 60° F. (15°·5 C.), measures a pint.

Tests.—Specific gravity 1·094. 359 grains by weight (6 fluid drachms) of it require for neutralisation 1000 grain-measures of the volumetric solution of soda, corresponding to 13·65 per cent. of real sulphuric acid. Six fluid drachms therefore contain half a molecular weight in grains (49) of real sulphuric acid (H_2SO_4).

Dose.—5 to 30 minims.

Preparation containing Diluted Sulphuric Acid.

Infusum Rosæ Acidum .	1 fluid drachm in 10 fluid ounces

ACIDUM SULPHUROSUM.

Sulphurous Acid.

Sulphurous acid gas, or sulphurous anhydride, SO_2, dissolved in water, and constituting 5 per cent. by weight of the solution; equivalent to 6·4 per cent. of real sulphurous acid, H_2SO_3.

Take of

Sulphuric Acid	4 fluid ounces
Wood Charcoal, broken into small pieces	1 ounce
Water	2 fluid ounces
Distilled Water	30 fluid ounces

Put the charcoal and sulphuric acid into a glass flask, connected by a glass tube with a wash-bottle containing the two ounces of water, whence a second tube leads into a pint bottle containing the distilled water, to the bottom of which the gas-delivery tube should pass. Apply heat to the flask until gas is evolved, which is to be conducted through the water in the wash-bottle, and then into the distilled water, the latter being kept cold, and the process being continued until the bubbles of gas pass through the solution apparently undiminished in size. The product should be adjusted to the strength above mentioned by the method described in the following paragraph, and be kept in a stoppered bottle in a cool place.

Characters and Tests.—A colourless liquid with a pungent sulphurous odour. Specific gravity 1·025. It gives but a very slight precipitate with chloride of barium, but a copious one if solution of chlorine be also added. 64 grains by weight of it mixed with one pint of recently boiled and cooled distilled water and a little mucilage of starch do not acquire a permanent blue colour with the volumetric solution of iodine until 1000 grain-measures of the latter have been added. When evaporated it leaves no residue.

Dose.—½ to 1 fluid drachm.

Official Sulphite.—Sodii Sulphis.

ACIDUM TANNICUM.

Tannic Acid.

$C_{27}H_{22}O_{17}$.

An acid extracted from galls. It may be obtained by the following process:—

Take of

Galls in powder . . .	of each a sufficient quantity
Ether	

Expose the powdered galls to a damp atmosphere for two or three days, and afterwards add sufficient ether to form a soft paste. Let this stand in a well-closed vessel for twenty-four hours, then, having quickly enveloped it in a linen cloth, submit it to strong pressure in a suitable press, so as to separate the liquid portion. Reduce the pressed cake to powder, mix it with sufficient ether, to which one-sixteenth of its bulk of water has been added, to form again a soft paste, and press this as before. Mix the expressed liquids, and expose the mixture to spontaneous evaporation until, by the aid subsequently of a little heat, it has acquired the consistence of a soft extract; then place it on earthen plates or dishes, and dry it in a hot-air chamber at a temperature not exceeding 212° F. (100° C.)

Characters and Tests.—In pale yellow vesicular masses or thin glistening scales, with a strongly astringent taste, and an acid reaction; readily soluble in water and rectified spirit, very sparingly soluble in ether. The aqueous solution precipitates solution of gelatine yellowish-white, and the persalts of iron of a bluish-black colour. It leaves no residue when burned with free access of air.

Dose.—2 to 10 grains.

Preparations.

Glycerinum Acidi Tannici .	1 part in 6 by weight
Suppositoria Acidi Tannici .	3 grains in each suppository
" " " cum Sapone .	
Trochisci Acidi Tannici .	½ grain in each lozenge

ACIDUM TARTARICUM.

Tartaric Acid.

$H_2C_4H_4O_6$.

An acid prepared from the acid tartrate of potassium. It may be obtained by the following process:—

Take of

Acid Tartrate of Potassium	45 ounces
Distilled Water	a sufficiency
Prepared Chalk	12½ ounces
Chloride of Calcium	13½ ounces
Sulphuric Acid	13 fluid ounces

Boil the acid tartrate of potassium with two gallons of the water, and add gradually the chalk, constantly stirring. When the effervescence has ceased, add the chloride of calcium dissolved in two pints of the water. When the tartrate of calcium has subsided, pour off the liquid, and wash the tartrate with distilled water until it is rendered tasteless. Pour the sulphuric acid first diluted with three pints of the water on the tartrate of calcium, mix thoroughly, boil for half an hour with repeated stirring, and filter through calico. Evaporate the filtrate at a low temperature until it acquires the specific gravity of 1·21, allow it to cool, and then separate and reject the crystals of sulphate of calcium which have formed. Again evaporate the clear liquor till a film forms on its surface, and allow it to cool and crystallise. Lastly purify the crystals by solution, filtration (if necessary), and recrystallisation.

Characters and Tests.—In colourless crystals, the primary form of which is the oblique rhombic prism. It has a strongly acid taste, and is readily soluble in less than its own weight of water and in less than three times its weight of rectified spirit. When to either solution, not too much diluted, a little acetate of potassium is added, a white crystalline precipitate is formed. Twenty-five grains of crystallised tartaric acid dissolved in water require for neutralisation 330 grain-measures of the volumetric solution of soda. An aqueous solution of the acid is not affected by sulphuretted hydrogen, and gives no precipitate with the solution of sulphate of calcium or of oxalate of ammonium. It leaves no residue, or only a mere trace, when burned with free access of air.

The powdered tartaric acid of trade, also, should respond to the foregoing tests.

Dose.—10 to 30 grains.

Official Tartrates.

Antimonium Tartaratum
Ferrum Tartaratum
Potassii Tartras
Potassii Tartras Acida
Sodii Citro-tartras Effervescens
Soda Tartarata

ACONITI FOLIA.

Aconite Leaves.

The fresh leaves and flowering tops of Aconitum Napellus, *Linn.*, gathered when about one-third of the flowers are expanded, from plants cultivated in Britain. *Bentl. and Trim. Med. Pl.* vol. i. plate 6.

Characters.—Leaves alternate, with long channelled stalks, very deeply cut palmately into 5 or 3 segments, which are again deeply and irregularly divided into oblong acute narrow lobes; exciting slowly, when chewed, a sensation of tingling and numbness. Flowers large, irregular, deep blue, in a somewhat loose terminal raceme.

Preparation.—Extractum Aconiti.

ACONITI RADIX.

Aconite Root.

The root of Aconitum Napellus, *Linn.*, collected in the winter or early spring before the leaves have appeared,

from plants cultivated in Britain, and carefully dried; or imported in a dried state from Germany.

Characters.—Usually from about two to three inches long, and from half to three-quarters of an inch thick at the upper extremity, where it is usually crowned with the remains of the base of the stem; conical in form, much shrivelled longitudinally, and more or less covered with the scars or bases of broken rootlets; dark brown externally, whitish within, and having a central cellular axis with about seven rays. No marked odour; taste at first somewhat bitterish-sweet, but exciting slowly, when chewed, after some minutes, a sensation of tingling and numbness, which lasts for some time.

Preparations.

Aconitina, the active principle
Linimentum Aconiti, 1 ounce to 1 fluid ounce
Tinctura Aconiti, 54½ grains to 1 fluid ounce

ACONITINA.

Aconitine.

Synonym.—Aconitia.

An alkaloid obtained from aconite root.

Take of

Aconite Root, in coarse powder	any convenient quantity
Rectified Spirit	of each a sufficiency
Distilled Water	
Solution of Ammonia	
Pure Ether	
Diluted Sulphuric Acid	

Mix the aconite root with twice its weight of the spirit, and apply heat until ebullition commences; then cool and macerate for four days. Transfer the whole to a displacement apparatus, and percolate, adding more spirit, when requisite, until the root is exhausted. Distil off the greater part of the spirit from the tincture, and evaporate the remainder over a water-bath until the whole of the alcohol has been dissipated. Mix the residual extract thoroughly with twice its weight of boiling distilled water, and when it has cooled to the temperature of the atmosphere, filter through paper. To the filtered liquid add solution of ammonia in slight excess, and heat them gently over a water-bath. Separate the precipitate on a filter, and dry it. Reduce this to coarse powder, and macerate it in successive portions of the pure ether with frequent agitation. Decant the several products, mix, and distil off the ether until the extract is dry. Dissolve the dry extract in warm distilled water acidulated with the sulphuric acid; and, when the solution is cold, precipitate it by the cautious addition of solution of ammonia diluted with four times its bulk of distilled water. Wash the precipitate on a filter with a small quantity of cold distilled water, and dry it by slight pressure between folds of filtering paper and subsequent exposure to air.

Characters and Tests.—A white, usually amorphous, solid; soluble in 150 parts of cold, and 50 of hot water, and much more soluble in alcohol, in ether, and in chloroform; strongly alkaline to reddened litmus, neutralising acids, and precipitated from solutions of its salts by the caustic alkalies, but not by carbonate of ammonium or the bicarbonates of sodium or potassium. It melts when heated, and burns with a smoky flame, leaving no residue if ignited with free access of air. When rubbed on the skin it causes a tingling sensation, followed by prolonged numbness. It is a very active poison.

Preparation.

Unguentum Aconitinæ . .	8 grains to 1 ounce

ADEPS BENZOATUS.

Benzoated Lard.

Take of

Prepared Lard . .	1 pound	or . .	50 parts
Benzoin, reduced to coarse powder . . .	140 grains . .	„ . .	1 part

Melt the lard by the heat of a water-bath, add the benzoin, and, frequently stirring them together, continue the application of heat for two hours; finally remove the residual benzoin by straining.

Preparations.

Unguentum Aconitinæ
,, Atropinæ
,, Belladonnæ
,, Calaminæ
,, Chrysarobini
,, Gallæ
,, Hydrargyri Subchloridi
Unguentum Iodoformi
,, Plumbi Acetatis
,, Potassii Iodidi
,, Sabinæ
,, Simplex
,, Staphisagriæ
,, Sulphuris
,, Zinci

ADEPS PRÆPARATUS.

Prepared Lard.

The purified fat of the hog, Sus scrofa, *Linn.*

Take of

The internal fat of the abdomen of the hog, perfectly fresh . . .	any convenient quantity

Remove as much of the external membranes as possible, and suspend the fat so that it shall be freely exposed to the air for some hours; then cut it into small pieces, and beat these in a stone mortar until they are thus, or by some equivalent process, reduced to a uniform mass in which the membranous vesicles are completely broken. Put the mass thus produced into a vessel surrounded by warm water, and apply a temperature not exceeding 130° F. (54°·4 C.) until the fat has melted and separated from the membranous matter. Finally strain the melted fat through flannel.

Characters and Tests.—A soft white fatty substance, melting at about 100° F. (37°·8 C.) Has no rancid odour; dissolves entirely in ether. Distilled water in which it has been boiled, when cooled and filtered, gives no precipitate with nitrate of silver, and is not rendered blue by the addition of solution of iodine.

Preparations.

Adeps Benzoatus Unguentum Iodi
Emplastrum Cantharidis Terebinthinæ
Unguentum Hydrargyri Nitratis

ÆTHER.

Ether.

Synonym.—Sulphuric Ether.

A volatile liquid prepared from alcohol, and containing not less than 92 per cent. by volume of pure ether $(C_2H_5)_2O$.

Take of

Rectified Spirit	50 fluid ounces
Sulphuric Acid	10 fluid ounces
Chloride of Calcium . . .	10 ounces
Slaked Lime	½ ounce
Distilled Water	13 fluid ounces

Mix the sulphuric acid with twelve fluid ounces of the spirit in a glass flask having a wide neck and capable of containing at least two pints, and, not allowing the mixture to cool, connect the flask by means of a bent glass tube with a Liebig's condenser, and distil at a temperature sufficient to maintain the liquid in brisk ebullition. As soon as the ethereal fluid begins to pass over, supply fresh spirit through a tube into the flask in a continuous stream, and in such quantity as to equal the volume of the fluid which distils over. For this purpose use a tube furnished with a stopcock to regulate the supply, connecting one end of the tube with a vessel containing the spirit raised above the level of the flask, and passing the other end into the acid fluid through a cork fitted into the flask. When the whole of the spirit has been added, and forty-two fluid ounces have distilled over, the process may be stopped.

Dissolve the chloride of calcium in the water, add the lime, and agitate the mixture in a bottle with the impure ether. Leave the mixture at rest for ten minutes, pour off the light supernatant fluid, and distil it until a glass bead of specific gravity 0·735 placed in the receiver begins to float. The ether and spirit retained by the chloride of calcium and by the residue of each rectification may be recovered by distillation and used in a subsequent operation.

Characters and Tests.—A colourless very volatile and inflammable liquid, emitting a strong and characteristic odour, and boiling below 105° F. (40°·5 C.) Specific gravity 0·735. Fifty measures agitated with an equal volume of water are reduced to 45, by an absorption of 10 per cent. It evaporates without residue.

Dose.—20 to 60 minims.

Preparations.

Æther Purus	
Collodium	6 volumes in 8, nearly
,, Flexile	6 volumes in 8 ,,
Spiritus Ætheris	1 volume in 3
,, ,, Compositus .	1 volume in 3, nearly
Tinctura Chloroformi et Morphinæ	1 volume in 32

ÆTHER ACETICUS.

Acetic Ether.

Synonym.—Acetate of Ethyl.

$C_2H_5C_2H_3O_2$.

May be obtained by the following process:—

Take of

Rectified Spirit	32¼ fluid ounces
Sulphuric Acid	32½ fluid ounces
Acetate of Sodium . . .	40 ounces
Carbonate of Potassium, freshly dried . .	6 ounces

To the spirit slowly add the acid, keeping the fluid cool, and, the product being cold, add the acetate, mixing thoroughly. Distil forty-five fluid ounces. Digest the distillate with the carbonate of potassium for three days in a stoppered bottle. Separate the ethereal fluid, and again distil until all but about four fluid ounces have passed over. Preserve the resulting acetic ether in a well-closed bottle and in a cool place.

Characters and Tests.—A colourless liquid with an agreeable ethereal odour. Specific gravity about 0·900. Boiling point about 166° F. (74°·4 C.) Soluble in all proportions in rectified spirit and in ether. One part, by weight, dissolves in about 10 parts of water at 60° F. (15°·5 C.)

Dose.—20 to 60 minims.

Preparation in which Acetic Ether is used.—Liquor Epispasticus.

ÆTHER PURUS.

Pure Ether.

Synonym.—Oxide of Ethyl.

Ether $(C_2H_5)_2O$, free from alcohol and water.

Take of

Ether . . Distilled Water	of each 2 pints	. . . or . .	40 fluid parts
Lime, recently prepared	1 ounce	. . ,, . .	1 part
Chloride of Calcium .	4 ounces	. . ,, . .	4 parts

Put the ether with half of the water into a bottle, and shake them together; allow them to remain at rest for a few minutes, and when the two liquids have separated, decant off the supernatant ether; mix this with the remainder of the water, and again, after separation, decant as before. Put now the washed ether, together with the lime and chloride of calcium, into a retort to which a receiver is closely attached, let them stand for twenty-four hours, then distil.

Test.—Specific gravity not exceeding 0·720. When shaken with a fourth of its bulk of solution of iodide of potassium and a little starch paste, no blue colour is produced.

ALCOHOL AMYLICUM.

Amylic Alcohol.

Synonyms.—**Fousel Oil; Hydrate of Amyl.**

Amylic alcohol, $C_5H_{11}HO$, with a small proportion of other spirituous substances. A liquid of oily consistence, contained in the crude spirit produced by the fermentation of saccharine solutions with yeast, and separated in the rectification or distillation of such crude spirit. It should be redistilled, and the product passing over at 253° to 260° F. (122°·8 to 126°·7 C.) be alone collected for use.

Characters and Tests.—A colourless liquid with a penetrating and oppressive odour, and a burning taste. When pure its specific gravity is 0·818. Sparingly soluble in water, but soluble in all proportions in alcohol, ether, and essential oils. Exposed to the air in contact with platinum-black, it is slowly oxidised, yielding valerianic acid.

Preparations for which Amylic Alcohol is used.

Amyl Nitris | Sodii Valerianas

ALCOHOL ETHYLICUM.

Ethylic Alcohol.

Synonym.—Absolute Alcohol.

C_2H_5HO.

Take of

Rectified Spirit	1 pint
Carbonate of Potassium, anhydrous .	2 ounces
Chloride of Calcium, fused . . .	a sufficiency

Add the carbonate of potassium to the spirit in a stoppered bottle, and macerate for twenty-four hours with frequent agitation. Put the chloride of calcium into a covered crucible, and subject it to a red heat for half an hour; then pour the fused salt on to a clean stone slab, cover it quickly with an inverted porcelain dish, and when it has congealed, break it up into small fragments, and enclose it in a dry stoppered bottle. Put one pound of this fused chloride of calcium into a flask, pour over it the spirit decanted from the carbonate of potassium, and closing the mouth of the flask with a cork, shake them together and allow them to stand for twenty-four hours with repeated agitation. Then attaching a dry condenser closely connected with a receiver from which free access of air is excluded, and applying the flame of a lamp to the flask, distil about two fluid ounces, which should be returned to the flask, after which the distillation is to be continued until fifteen fluid ounces have been recovered.

Characters and Tests.—Colourless and free from empyreumatic odour. Specific gravity from 0·797 to 0·800, and, therefore, containing one, or at most two, per cent. of water. It is entirely volatilised by heat, is not rendered turbid when mixed with water, and does not cause anhydrous sulphate of copper to assume a decided blue colour even after the two have been well shaken together.

Preparations in which Ethylic Alcohol is used.

Chloroform	Liquor Sodii Ethylatis

ALOE BARBADENSIS.

Barbadoes Aloes.

The juice, when inspissated, which flows from the transversely cut bases of the leaves of Aloe vulgaris, *Lam.*; *Bentl. and Trim. Med. Pl.* vol. iv. plate 282. Imported from Barbadoes and the Dutch West Indian Islands, and known in commerce as Barbadoes and Curaçoa Aloes.

Characters and Tests.—Colour varying from deep reddish-brown or chocolate-brown to dark brown or almost black; fracture usually dull and waxy, or sometimes smooth and glassy; opaque in mass, but in thin films translucent and of an orange-brown tint; powder dull olive-yellow. Odour strong and disagreeable; taste bitter and nauseous. The

Curaçoa variety is commonly more glassy and translucent than the ordinary Barbadoes kind, and has a distinctive odour. When moistened with rectified spirit and examined in a thin stratum under the microscope, it exhibits numerous crystals. Almost entirely soluble in proof spirit.

Dose.—2 to 6 grains.

Preparations.

Aloin	
Enema Aloes	4 grains in 1 fluid ounce
Extractum Aloes Barbadensis .	8 parts from 10, nearly
Pilula Aloes Barbadensis . .	1 part in 2, nearly
„ „ et Ferri . . .	1 part in 5¼
„ Cambogiæ Composita . .	1 part in 6, nearly
„ Colocynthidis Composita .	1 part in 8, nearly
„ „ et Hyoscyami	1 part in 4½, nearly

ALOE SOCOTRINA.

Socotrine Aloes.

The juice, when inspissated, which flows from the transversely cut bases of the leaves of Aloe Perryi, *Baker*; *Bot. Mag.* plate 6596; and probably other species. Imported principally by way of Bombay and Zanzibar, and known in commerce as Socotrine and Zanzibar Aloes.

Characters and Tests.—Colour of various shades of reddish-brown, darkening by exposure to the air; fracture usually smooth and resinous, or rarely rough and irregular; in thin films transparent and orange-ruby-red or orange-brown; powder bright tawny reddish-brown; odour strong and somewhat agreeable; taste very bitter. When moistened with rectified spirit and examined in a thin stratum under the microscope, it exhibits numerous crystals. In other cases Socotrine aloes is more or less opaque and liver-coloured, and is then known as hepatic aloes. Almost entirely soluble in proof spirit.

Dose.—2 to 6 grains.

Preparations.

Aloin	
Decoctum Aloes Compositum (Extract)	4 grains in 1 fluid ounce
Enema Aloes	4 grains in 1 fluid ounce
Extractum Aloes Socotrinæ	1 part from 2, nearly
,, Colocynthidis Compositum (Extract)	1 part in 2¼, nearly
Pilula Aloes et Asafœtidæ	1 part in 4
,, ,, et Myrrhæ	1 part in 3
,, ,, Socotrinæ	1 part in 2, nearly
,, Rhei Composita	1 part in 6
Tinctura Aloes	11 grains to 1 fluid ounce
,, Benzoini Composita	8 grains to 1 fluid ounce
Vinum Aloes	16½ grains to 1 fluid ounce

ALOIN.

Aloin.

$C_{16}H_{18}O_7$.

A crystalline substance extracted from aloes by solvents and purified by recrystallisation. As obtained from the different varieties of aloes, the products differ slightly, but their medicinal properties are similar.

Characters.—Usually in tufts of acicular crystals, yellow, inodorous, and having the taste of aloes. Sparingly soluble in cold water, more so in cold rectified spirit, freely soluble in the hot fluids. Insoluble in ether. Not readily altered in acidified or neutral solutions; rapidly altered in alkaline fluids.

Dose.—½ grain to 2 grains.

ALUMEN.

Alum.

$Al_2 3SO_4, K_2SO_4, 24H_2O$ or $Al_2 3SO_4, (NH_4)_2SO_4, 24H_2O$.

Sulphate of aluminium and potassium (Potassium Alum or Potash Alum), or of aluminium and ammonium

(Ammonium Alum or Ammonia Alum), crystallised from solution in water.

Characters and Tests.—In colourless transparent crystalline masses, exhibiting the faces of the regular octahedron, and having an acid sweetish astringent taste. Its aqueous solution gives with caustic potash or soda a white precipitate soluble in an excess of the reagent; yields an immediate precipitate with chloride of barium; and affords little or no blue colour on the addition of ferrocyanide or ferricyanide of potassium. It is soluble in ten or eleven parts of water at common temperatures.

Dose.—10 to 20 grains.

Preparation.—Glycerinum Aluminis, 1 part in $7\frac{1}{4}$.

ALUMEN EXSICCATUM.

Dried Alum.

Al_23SO_4,K_2SO_4.

Take of

Potassium Alum	4 ounces

Heat the alum in a porcelain dish or other suitable vessel till it liquefies, then raise and continue the heat, not allowing it to exceed 400° F. (204°·4 C.), till aqueous vapour ceases to be disengaged, and the salt has lost between 45 and 46 per cent. of its weight. Reduce the residue to powder, and preserve it in a well-stoppered bottle.

Character.—It is slowly but completely soluble in water.

AMMONIACUM.

Ammoniacum.

A gum-resinous exudation from the stem (after being punctured by beetles) of Dorema Ammoniacum, *Don; Bentl. and Trim. Med. Pl.* vol. ii. plate 131.

Characters and Tests.—In roundish tears varying in size from that of a coriander fruit to a cherry, or in nodular masses of agglutinated tears of various sizes and forms; pale yellowish-brown externally when recent, but darkening by keeping to cinnamon brown, milky white and opaque internally; hard and brittle when cold, and breaking with a dull waxy fracture, but readily softening with heat. It has a faint peculiar non-alliaceous odour, and a bitter acrid taste. When triturated with water it forms a nearly white emulsion. It is coloured yellow by caustic potash; and a solution of chlorinated soda gives it a bright orange hue.

Dose.—10 to 20 grains.

Preparations.

Emplastrum Ammoniaci cum Hydrargyro	12 parts in 15
,, Galbani	1 part in 11
Mistura Ammoniaci	13½ grains to 1 fluid ounce, nearly
Pilula Scillæ Composita	1 part in 6¼, nearly
,, Ipecacuanhæ cum Scilla	1 part in 7

AMMONII BENZOAS.

Benzoate of Ammonium.

Synonyms.—Ammoniæ Benzoas; Benzoate of Ammonia.

$NH_4C_7H_5O_2$.

Take of

Solution of Ammonia	3 fluid ounces, or a sufficiency
Benzoic Acid	2 ounces
Distilled Water	4 fluid ounces

Dissolve the benzoic acid in three fluid ounces of solution of ammonia previously mixed with the water; evaporate, keeping ammonia in slight excess; and set aside that crystals may form.

Characters and Tests.—In colourless laminar crystals, soluble in water and in alcohol. It gives a bulky yellowish precipitate with persalts of iron. Its aqueous solution when heated with caustic potash evolves ammonia, and, if it be not too dilute, when acidulated with hydrochloric acid it gives a deposit of benzoic acid. When heated it sublimes without residue.

Dose.—10 to 20 grains.

AMMONII BROMIDUM.

Bromide of Ammonium.

NH_4Br.

May be formed by neutralising hydrobromic acid with ammonia, evaporating and crystallising.

Characters and Tests.—In colourless crystals, which may become slightly yellow by exposure to the air. Has a pungent saline taste. May be sublimed unchanged by the application of heat. Readily soluble in water; less soluble in spirit. Does not give any immediate yellow colour on being moistened with diluted sulphuric acid. A solution of the salt in water, mixed with mucilage of starch and a drop of an aqueous solution of bromine or chlorine, does not exhibit any blue colour. The aqueous solution gives only a faint cloudiness with chloride of barium. Five grains dissolved in an ounce of distilled water to which two drops of solution of yellow chromate of potassium have been added require not more than 514·5 and not less than 508·5 grain-measures of the volumetric solution of nitrate of silver to produce a permanent red precipitate.

Dose.—2 to 20 grains.

AMMONII CARBONAS.

Carbonate of Ammonium.

Synonyms.—Ammoniæ Sesquicarbonas; Ammoniæ Carbonas; Carbonate of Ammonia.

$N_3H_{11}C_2O_5$.

A volatile and pungent ammoniacal salt, produced by submitting a mixture of sulphate or chloride of ammonium and carbonate of calcium to sublimation and resublimation. It is considered to be a compound of acid carbonate of ammonium (NH_4HCO_3) with carbamate of ammonium ($NH_4NH_2CO_2$), and the compound molecule is usually regarded as containing one molecule of each of these salts.

Characters and Tests.—In translucent crystalline masses, with a strong ammoniacal odour, and alkaline reaction; soluble in cold water, more sparingly in spirit. It volatilises entirely when heated, and is readily dissolved by acids with effervescence. If diluted nitric acid be added to it in slight excess, and the solution be boiled, it will give no precipitate with chloride of barium or nitrate of silver. 52·3 grains dissolved in one ounce of distilled water will be neutralised by 1000 grain-measures of the volumetric solution of oxalic acid.

20 grains of Carbonate of Ammonium neutralise { 26¾ grains Citric Acid
28¼ grains Tartaric Acid

Dose.—3 to 10 grains.

Preparations for which Carbonate of Ammonium is used.

Bismuthi Carbonas
Liquor Ammonii Acetatis Fortior
,, ,, Citratis Fortior
Spiritus Ammoniæ Aromaticus

AMMONII CHLORIDUM.

Chloride of Ammonium.

Synonym.—Sal Ammoniac.

NH_4Cl.

May be formed by neutralising hydrochloric acid with ammonia or carbonate of ammonium and evaporating to dryness. It is usually prepared by sublimation.

Characters and Tests.—In colourless inodorous minute crystals, or in translucent fibrous masses, tough, and difficult to powder; soluble in water and in rectified spirit. Its aqueous solution when heated with caustic potash evolves ammonia, and when treated with nitrate of silver forms a copious curdy precipitate. When heated it volatilises without decomposition, and leaves no residue.

Dose.—5 to 20 grains.

Preparations for which Chloride of Ammonium is used.

Liquor Hydrargyri Perchloridi, ½ grain in 1 fluid ounce
Liquor Ammoniæ Fortior

AMMONII NITRAS.

Nitrate of Ammonium.

Synonyms. Ammoniæ Nitras; Nitrate of Ammonia.

NH_4NO_3.

Produced by neutralising diluted nitric acid with solution of ammonia or carbonate of ammonium, evaporating the solution until crystals are obtained, and keeping these fused at a temperature not exceeding 320° F. (160° C.) until the vapour of water is no longer emitted.

Characters and Tests.—A white deliquescent salt, in confused crystalline masses, having a bitter acrid taste. Soluble in less than its own weight of water, and sparingly soluble in rectified spirit. A solution of one part in eight parts of distilled water gives no precipitate with solution of nitrate of silver or of chloride of barium. Heated with caustic potash, it evolves ammonia; with sulphuric acid it emits nitric acid vapour. It fuses at a temperature of 320° F. (160° C.), and at 350° F. (176°·7 C.) to 450° F. (232°·2 C.) it is entirely resolved into nitrous oxide gas, N_2O, and the vapour of water.

AMMONII PHOSPHAS.

Phosphate of Ammonium.

Synonyms.—**Ammoniæ Phosphas; Phosphate of Ammonia.**

$(NH_4)_2HPO_4$.

Take of

Diluted Phosphoric Acid . .	20 fluid ounces
Strong Solution of Ammonia .	a sufficiency

Add the ammonia to the phosphoric acid until the solution is slightly alkaline, then evaporate the liquid, adding more ammonia from time to time, so as to keep it in slight excess, and when crystals are formed, on the cooling of the solution, dry them quickly on filtering paper placed on a porous tile, and preserve them in a stoppered bottle.

Characters and Tests.—In transparent colourless prisms. Soluble in water, insoluble in rectified spirit. When heated with caustic potash, ammonia is evolved. The aqueous solution gives a yellow precipitate with nitrate of silver. If twenty grains of this salt be dissolved in water and solution of ammonio-sulphate of magnesium added, a crystalline precipitate falls, which, when well washed upon a filter with solution of ammonia diluted with an equal volume of water, dried, and heated to redness, leaves 16·8 grains.

Dose.—5 to 20 grains.

AMYGDALA AMARA.

Bitter Almond.

The ripe seed of the bitter almond tree, Prunus Amygdalus, *Stokes, var.* amara, *Baillon* (Amygdalus communis, *Linn. var.* amara, *DC.*)

Characters.—Resembles the sweet almond in appearance, but is distinguished by being broader and shorter, by its very bitter taste, and by its aqueous emulsion having an odour like that of ratafia or of peach-blossoms.

Yields by expression,

Oleum Amygdalæ

AMYGDALA DULCIS.

Sweet Almond.

The ripe seed of the sweet almond tree, Prunus Amygdalus, *Stokes, var.* dulcis, *Baillon* (Amygdalus communis, *Linn. var.* dulcis, *DC.*); *Bentl. and Trim. Med. Pl.* vol. ii. plate 99. Imported from Malaga, and known as the Jordan almond.

Characters.—About an inch or somewhat more in length, nearly oblong in form, more or less compressed, pointed at one end and rounded at the other, and covered by a scurfy cinnamon-brown coat. It has a bland sweet nutty taste, and when triturated with water forms a white emulsion of an agreeable taste, but without any marked odour.

Preparations.

Oleum Amygdalæ
Pulvis Amygdalæ Compositus, 8 parts in 13

AMYL NITRIS.

Nitrite of Amyl.

A liquid produced by the action of nitric or nitrous acid on amylic alcohol which volatilises between 262° and 270° F. (or about 128° to 132° C.) It consists chiefly of nitrite of amyl, $C_5H_{11}NO_2$. It should be stored in hermetically-sealed vessels or in well-stoppered bottles, and in a cool dark place.

Characters and Tests.—An ethereal liquid of a yellowish colour, and peculiar, not disagreeable odour. Specific gravity about 0·880. Submitted to distillation, about 70 per cent. passes over at 194° to 212° F. (90° to 100°C.), the bulb of the thermometer not dipping below the surface of the residual fluid. Insoluble in water. Soluble in rectified spirit in all proportions. If it be added drop by drop to fused caustic potash, valerianate of potassium will be formed.

Dose.—By inhalation, the vapour of 2 to 5 minims; but in mixtures to be swallowed, from ½ minim to 1 minim. To be used with caution.

AMYLUM.

Starch.

The starch procured from the grains of common wheat, Triticum sativum, *Lam.* (Triticum vulgare, *Villars*); maize, Zea Mays, *Linn.*; and rice, Oryza sativa, *Linn.*

Characters and Tests.—In fine powder, or in irregular angular or columnar masses, which are readily reduced to powder; white, inodorous. When lightly rubbed in a mortar with a little cold distilled water, the mixture is neither acid nor alkaline to test-paper, and the filtered liquid does not become blue on the addition of solution of iodine. Mixed with boiling water and cooled, it gives a deep blue colour with iodine. Under the microscope these varieties of starch present the following characters:—1. Wheat starch: A mixture of large and small granules, which are lenticular in form, and marked with faint concentric striæ surrounding a nearly central hilum. 2. Maize starch: Granules more uniform in size, frequently polygonal, somewhat smaller than the large granules of wheat starch, and having a very distinct hilum but without evident concentric striæ. 3. Rice starch: Granules extremely minute, nearly uniform in size, polygonal, hilum small and without striæ.

Preparations.

Glycerinum Amyli	1 part in 11 by weight
Mucilago Amyli	12 grains to 1 fluid ounce
Pulvis Tragacanthæ Compositus .	1 part in 6
Suppositoria Acidi Tannici cum Sapone	
,, Morphinæ cum Sapone	

ANETHI FRUCTUS.

Dill Fruit.

The dried fruit of Peucedanum graveolens, *Hiern.* (Anethum graveolens, *Linn.*); *Bentl. and Trim. Med. Pl.* vol. ii. plate 132.

Characters.—Broadly oval, about one-sixth of an inch long, flat, and surrounded by a broad membranous border. It has a brown colour, the membranous border being paler. The half-fruits or mericarps are usually distinct in the fruits of commerce. Odour and taste agreeably aromatic.

Preparations.

Aqua Anethi	1 pound to 1 gallon
Oleum Anethi	

ANISI FRUCTUS.

Anise Fruit.

The dried fruit of Pimpinella Anisum, *Linn.*; *Berg. nd Schmidt,* t. 18 *d.*

Characters.—Anise fruits, with the exception of the ussian variety, which is shorter, average about one-fifth f an inch in length; they are ovoid-oblong in form, of a reyish-brown colour, and their whole surface is covered with hort hairs. Their two constituent mericarps are united and tached to a common stalk; and each mericarp is traversed y five pale slender entire ridges, and its transverse section

exhibits about fifteen vittæ. They have an agreeable aromatic odour, and a sweetish spicy taste.

Preparations.

Aqua Anisi	Oleum Anisi

ANISI STELLATI FRUCTUS.

Star-Anise Fruit.

The dried fruit of Illicium anisatum, *Linn.*; *Nees, Plant. Med.* plate 371. From plants cultivated in China.

Characters.—Star-anise fruit is usually composed of eight fully developed carpels diverging horizontally in a stellate manner from a short central generally stalked axis. Each carpel is boat-shaped, more or less beaked, irregularly wrinkled, of a rusty-brown colour, and commonly split on its upper margin so as to expose its solitary flattish smooth shining somewhat oblique reddish-brown seed. Odour and taste of both pericarp and seed closely resembling anise fruit.

Preparation.—Oleum Anisi.

ANTHEMIDIS FLORES.

Chamomile Flowers.

The dried single and double flower-heads or capitula of Anthemis nobilis, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iii. plate 154. From cultivated plants.

Characters.—The single chamomile flowers of commerce are those in which the capitula have some yellow tubular florets in the centre, surrounded by a variable number of those which are white and ligulate; the double flowers are those in which all or nearly all the florets are white and ligulate. In both kinds the receptacle is solid, conical, and densely covered with chaffy scales; and both varieties, but especially the single, have a strong aromatic odour and very bitter taste.

Preparations.

Extractum Anthemidis	
Infusum Anthemidis .	½ ounce to 10 fluid ounces
Oleum Anthemidis	

ANTIMONII OXIDUM.

Oxide of Antimony.

Sb_2O_3.

Take of

Solution of Chloride of Antimony .	16 fluid ounces
Carbonate of Sodium . . .	6 ounces
Water	2 gallons
Distilled Water	a sufficiency

Pour the antimonial solution into the water, mix thoroughly, let the precipitate settle, remove the supernatant liquid by a siphon, add one gallon of distilled water, agitate well, let the precipitate subside, again withdraw the fluid, and repeat the processes of affusion of distilled water, agitation, and subsidence. Add now the carbonate of sodium previously dissolved in two pints of distilled water, leave them in contact for half an hour, stirring frequently, collect the deposit on a calico filter, and wash with boiling distilled water until the washings cease to give a precipitate with a solution of nitrate of silver acidulated by nitric acid. Lastly, dry the product at a temperature not exceeding 212° F. (100° C.)

Characters and Tests.—A greyish-white powder, fusible at a low red heat, insoluble in water, but readily dissolved by hydrochloric acid. The solution, dropped into distilled water, gives a white deposit, at once changed to orange by sulphuretted hydrogen. It dissolves entirely when boiled with an excess of the acid tartrate of potassium.

Dose.—1 to 4 grains.

Preparations for which Oxide of Antimony is used.

Antimonium Tartaratum	
Pulvis Antimonialis	1 part in 8

Preparations containing Antimony.

Antimonii Oxidum
Antimonium Nigrum Purificatum
,, Sulphuratum
,, Tartaratum
Liquor Antimonii Chloridi
Pilula Hydrargyri Subchloridi Composita
Pulvis Antimonialis
Unguentum Antimonii Tartarati
Vinum Antimoniale

ANTIMONIUM NIGRUM PURIFICATUM.

Purified Black Antimony.

Native sulphide of antimony, Sb_2S_3, purified from siliceous matter by fusion, reduced to fine powder, and, if, on testing as described below, any soluble salt of arsenium is present, purified by the following process.

Take of

Native Sulphide of Antimony, in fine powder	1 pound
Solution of Ammonia. . . .	8 fluid ounces
Distilled Water	a sufficiency

Macerate the sulphide of antimony with the solution of ammonia for five days, stirring frequently. Then allow the powder to subside, pour off the supernatant liquid, and thoroughly wash the residue with the water. Dry the powder by the aid of heat.

Characters and Tests.—A greyish-black crystalline powder. It dissolves almost entirely in boiling hydrochloric acid, evolving sulphuretted hydrogen, and the solution affords a white precipitate when poured into water. If one grain be dissolved in hydrochloric acid, and the solution, slightly diluted, be gently warmed with a piece of bright copper foil, the copper being washed, dried, and heated in a dry narrow test-tube, no crystalline sublimate (of arsenious anhydride) should form on the upper cool part of the tube.

Preparations for which Purified Black Antimony is used.

Antimonium Sulphuratum
Liquor Antimonii Chloridi

ANTIMONIUM SULPHURATUM.

Sulphurated Antimony.

A mixture containing sulphide and oxide of antimony, Sb_2S_5 and Sb_2O_3.

Take of

Purified Black Antimony . . .	10 ounces
Sublimed Sulphur	10 ounces
Solution of Soda	4½ pints
Diluted Sulphuric Acid Distilled Water } of each . .	a sufficiency

Mix the purified black antimony with the sublimed sulphur and the solution of soda, and boil for two hours with frequent stirring, adding distilled water occasionally to maintain the same volume. While still hot add nine pints of boiling distilled water. Strain the liquor through calico, and, before it cools, add to it by degrees the diluted sulphuric acid till the latter is in slight excess. Collect the precipitate on a calico filter, wash with distilled water till the washings no longer precipitate with chloride of barium, and dry at a temperature not exceeding 212° F. (100° C.)

Characters and Tests.—An orange-red powder, readily dissolved by caustic soda, also by hot hydrochloric acid with the evolution of sulphuretted hydrogen and the separation of sulphur. Sixty grains moistened and warmed with successive portions of nitric acid until red fumes cease to be evolved, and then dried and heated to redness, gives a white residue weighing about 40 grains.

Dose.—1 to 5 grains.

Preparation.

Pilula Hydrargyri Subchloridi Composita . 1 part in 5

ANTIMONIUM TARTARATUM.

Tartarated Antimony.

Synonyms.—**Antimonii Potassio-tartras; Antimonium Tartarizatum; Tartar Emetic.**

$(KSbOC_4H_4O_6)_2H_2O.$

An oxytartrate of antimony and potassium.

Take of

Oxide of Antimony	5 ounces
Acid Tartrate of Potassium, in fine powder	6 ounces
Distilled Water	2 pints

Mix the oxide of antimony and acid tartrate of potassium with sufficient distilled water to form a paste, and set aside for twenty-four hours. Then add the remainder of the water, and boil for a quarter of an hour, stirring frequently. Filter, and set aside the clear filtrate to crystallise. Pour off the mother liquor, evaporate to one third, and set aside that more crystals may form. Dry the crystals on filtering paper at the temperature of the air.

Characters and Tests.—In colourless transparent crystals exhibiting triangular facets, soluble in water, and less so in proof spirit. It decrepitates and blackens upon the application of heat. Its solution in water gives with hydrochloric acid a white precipitate, soluble in excess, and which is not formed if tartaric acid be previously added. Twenty-nine grains dissolves slowly but without residue in a fluid ounce of distilled water at 60° F. (15°·5 C.), and the solution gives with sulphuretted hydrogen an orange precipitate which, when washed and dried at 212° F. (100° C.), weighs 15·1 grains.

Dose.—As a diaphoretic, $\frac{1}{16}$ to $\frac{1}{6}$ of a grain; as an emetic, 1 to 2 grains.

Preparations.

Unguentum Antimonii Tartarati .	1 part in 5
Vinum Antimoniale . . .	2 grains in 1 fluid ounce

APOMORPHINÆ HYDROCHLORAS.

Hydrochlorate of Apomorphine.

$C_{17}H_{17}NO_2,HCl.$

Synonym.—Apomorphiæ Hydrochloras.

The hydrochlorate of an alkaloid, obtained by heating morphine or codeine in sealed tubes with hydrochloric acid.

Characters and Tests.—Small, greyish-white, shining, acicular crystals, turning green on exposure to light and air, inodorous, with a very faint acid reaction on moistened litmus paper. Soluble in seven parts of water and fifty parts of alcohol, the solutions being decomposed with production of a green colour when they are boiled. From solutions, bicarbonate of sodium throws down a precipitate which becomes green on standing and then forms a purple solution with ether, violet with chloroform, and bluish-green with alcohol. With dilute solution of perchloride of iron it gives a deep red and with nitric acid a blood-red coloration.

Preparation.—Injectio Apomorphinæ Hypodermica.

AQUA.

Water.

Natural water, the purest that can be obtained, cleared, if necessary, by filtration; free from odour, unusual taste, and visible impurity. To be used whenever 'Water' is ordered in the British Pharmacopœia. In dispensing prescriptions, *aqua* should be understood to mean distilled water.

AQUA ANETHI.

Dill Water.

Take of

Dill Fruit, bruised	1 pound
Water	2 gallons

Distil one gallon.

AQUA ANISI.

Anise Water.

Take of

Anise Fruit, bruised	1 pound
Water	2 gallons

Distil one gallon.

AQUA AURANTII FLORIS.

Orange-flower Water.

The distilled water of the flowers of the Bitter Orange tree, Citrus vulgaris, *Risso* (Citrus Bigaradia, *Duhamel*), *Hist. Nat. des Orang.* plate 30; and of the Sweet Orange tree, Citrus Aurantium, *Risso*; *Bentl. and Trim. Med. Pl.* vol. i. plate 51.

The Orange-flower Water of commerce is usually three times the strength of that employed in former years.

Characters and Test.—Colourless or with a slight greenish-yellow tint; odour very fragrant; taste bitter. Not coloured by sulphuretted hydrogen.

Preparation.—Syrupus Aurantii Floris.

AQUA CAMPHORÆ.

Camphor Water.

Synonym.—**Mistura Camphoræ.**

Take of

Camphor, crushed	½ ounce
Distilled Water	1 gallon

Enclose the camphor in a muslin bag, and attach this to a piece of glass, by means of which it may be kept at the bottom of a bottle containing the distilled water. Close the mouth of the bottle, macerate for at least two days, and then pour off the solution when it is required.

Dose.—1 to 2 fluid ounces.

Preparations containing Camphor Water.

Injectio Apomorphinæ Hypodermica
,, Ergotini Hypodermica

AQUA CARUI.

Caraway Water.

Take of

Caraway Fruit, bruised	1 pound
Water	2 gallons

Distil one gallon.

AQUA CHLOROFORMI.

Chloroform Water.

Take of

Chloroform	1 fluid drachm
Distilled Water	25 fluid ounces

Put them into a two-pint stoppered bottle, and shake them together until the chloroform is entirely dissolved in the water.

Dose.—½ to 2 fluid ounces.

AQUA CINNAMOMI.

Cinnamon Water.

Take of

Cinnamon Bark, bruised	20 ounces
Water	2 gallons

Distil one gallon.

Preparations containing Cinnamon Water.

Mistura Cretæ
„ Guaiaci
Mistura Spiritus Vini Gallici

AQUA DESTILLATA.

Distilled Water.

H_2O.

Take of

Water	10 gallons

Distil from a copper still, connected with a block-tin worm; reject the first half-gallon, and preserve the next eight gallons.

Tests.—A fluid ounce of it evaporated in a clean glass capsule leaves scarcely a visible residue. It is not affected by sulphuretted hydrogen, oxalate of ammonium, nitrate of silver, chloride of barium, solution of lime, or a mixture of starch mucilage and iodide of potassium. It gives only a faint yellow coloration when a solution of potassio-mercuric iodide is added to three or four ounces.

AQUA FŒNICULI.

Fennel Water.

Take of

Fennel Fruit, bruised	1 pound
Water	2 gallons

Distil one gallon.

AQUA LAUROCERASI.

Cherry-Laurel Water.

Take of

Fresh leaves of Cherry-Laurel	1 pound
Water	2½ pints

Chop the leaves, crush them in a mortar, introduce them with the water into a retort, and distil one pint of liquid. Shake the product, filter through paper, and adjust the strength of the finished product either by addition of hydrocyanic acid or by diluting the distillate with distilled water, so that 810 grains of it, tested as described in the process for diluted hydrocyanic acid, shall require 150 grain-measures of the volumetric solution of nitrate of silver to be added, before a permanent precipitate begins to form, which corresponds to 0·1 per cent. of real hydrocyanic acid.

Dose.—½ to 2 fluid drachms.

AQUA MENTHÆ PIPERITÆ.

Peppermint Water.

Take of

Oil of Peppermint	1½ fluid drachm
Water	1½ gallon

Distil one gallon.

Preparation.—Mistura Ferri Aromatica.

AQUA MENTHÆ VIRIDIS.

Spearmint Water.

Take of

Oil of Spearmint	1½ fluid drachm
Water	1½ gallon

Distil one gallon.

AQUA PIMENTÆ.

Pimento Water.

Take of

Pimento, bruised	14 ounces
Water	2 gallons

Distil one gallon.

AQUA ROSÆ.

Rose Water.

Take of

Fresh petals of the Hundred-leaved Rose, (or an equivalent quantity of the petals preserved while fresh with common salt)	10 pounds
Water	5 gallons

Distil one gallon.

Preparations for which Rose Water is used.

Mistura Ferri Composita | Trochisci Bismuthi

AQUA SAMBUCI.

Elder-flower Water.

Take of

Fresh Elder Flowers, separated from the stalks (or an equivalent quantity of the flowers preserved while fresh with common salt)	10 pounds
Water	5 gallons

Distil one gallon.

ARGENTI ET POTASSII NITRAS.

Nitrate of Silver and Potassium.

Synonym.—Mitigated Caustic.

Take of

Nitrate of Silver	1 ounce
Nitrate of Potassium	2 ounces

Fuse and mix thoroughly together in a capsule of platinum or thin porcelain, and pour the melted mass into proper moulds. Preserve in bottles carefully stoppered.

Characters and Tests.—White or greyish-white cylindrical rods or cones; freely soluble in distilled water, but only sparingly in rectified spirit. The aqueous solution gives with hydrochloric acid a curdy white precipitate which darkens by exposure to light; the filtrate from this mixture giving a yellow precipitate with perchloride of platinum, and evolving ruddy fumes when warmed with sulphuric acid and copper. Thirty grains dissolved in half an ounce of distilled water gives with hydrochloric acid a precipitate, which, when washed with hot distilled water and thoroughly dried, weighs 8·44 grains.

ARGENTI NITRAS.

Nitrate of Silver.

Synonym.—Lunar Caustic.

$AgNO_3$.

Take of

Refined Silver	3 ounces
Nitric Acid	2½ fluid ounces
Distilled Water	5 ounces

Add the nitric acid and the water to the silver in a flask, and apply a gentle heat till the metal is dissolved. Decant the clear liquor from any black powder which may be present, into a porcelain dish, evaporate, and set aside to crystallise; pour off the liquor, and again evaporate and crystallise. Let the crystals drain in a glass funnel, and dry them by exposure to the air, carefully avoiding the contact of all organic substances. To obtain the nitrate in rods, fuse the crystals in a capsule of platinum or thin porcelain, and pour the melted salt into proper moulds. Nitrate of silver must be preserved in bottles carefully stoppered.

Characters and Tests.—In colourless tabular crystals, the primary form of which is the right rhombic prism; or in white cylindrical rods; soluble in distilled water, and in rectified spirit. The solution gives with hydrochloric acid a curdy white precipitate, which darkens by exposure to light, and is soluble in solution of ammonia. A small fragment heated on charcoal with the blowpipe first melts, and then deflagrates, leaving behind a dull white metallic coating. Ten grains dissolved in two fluid drachms of distilled water, gives with hydrochloric acid a precipitate, which, when washed with hot distilled water and thoroughly dried, weighs 8·44 grains. The filtrate when evaporated by a water-bath leaves no residue.

Dose.—$\frac{1}{6}$ to $\frac{1}{3}$ grain.

To form Toughened Nitrate of Silver or 'Toughened Caustic,' add 5 parts of nitrate of potassium to 95 parts of the nitrate of silver before fusion. 10 grains of this preparation will yield with hydrochloric acid 8 grains of precipitate, and the filtrate when evaporated will leave a white residue.

Preparations for which Nitrate of Silver is used.

Argenti et Potassii Nitras	Argenti Oxidum

ARGENTI OXIDUM.

Oxide of Silver.

Ag_2O.

Take of

Nitrate of Silver, in crystals	$\frac{1}{2}$ ounce
Solution of Lime	$3\frac{1}{2}$ pints
Distilled Water	10 fluid ounces

Dissolve the nitrate of silver in four ounces of the distilled water, and, having poured the solution into a bottle containing the solution of lime, shake the mixture well, and set it aside to allow the deposit to settle. Draw off the supernatant liquid, collect the deposit on a filter, wash it with the remainder of the distilled water, and dry it at a temperature not exceeding 212° F. (100° C.) Keep it in a stoppered bottle.

Characters and Tests.—An olive-brown powder, which at a low red heat gives off oxygen, and is reduced to the metallic state. It dissolves completely in nitric acid without the evolution of any gas, forming a solution which has the characters of nitrate of silver. Twenty-nine grains heated to redness leaves 27 grains of metallic silver.

Dose.—½ to 2 grains.

ARGENTUM PURIFICATUM.

Refined Silver.

Pure metallic silver.

Test.—If ammonia be added in excess to a solution of the metal in nitric acid, the resulting fluid exhibits neither colour nor turbidity. Ten grains dissolved in a little nitric acid, the solution diluted with water, and diluted hydrochloric acid added in slight excess, yields a white precipitate, which, when thoroughly washed, dried, and heated, weighs 13·25 grains.

Preparation.—Argenti Nitras.

ARMORACIÆ RADIX.

Horseradish Root.

The fresh root of Cochlearia Armoracia, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. i. plate 21. From plants cultivated in Britain, and most active in the autumn and early spring before the leaves have appeared.

Characters.—Nearly cylindrical, except at the upper end, where it is enlarged and conical, and marked in an annulated manner by the scars of fallen leaves. It is from half an inch to about an inch in diameter, and commonly a foot or more in length; pale yellowish-white or brownish-white externally, whitish and fleshy within. Taste very pungent, but inodorous except when scraped or bruised, when it exhales a characteristic pungent odour.

Preparation.—Spiritus Armoraciæ Compositus.

ARNICÆ RHIZOMA.

Arnica Rhizome.

Synonym.—Arnicæ Radix.

The dried rhizome and rootlets of Arnica montana, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iii. plate 158.

Characters.—Rhizome cylindrical, dark brown, from one to two inches or more in length, and from about a sixth to a quarter of an inch in diameter, contorted, rough from the scars of fallen leaves, some remains of which are usually to be found at its upper end, and giving off from its under surface numerous dark brown filiform wiry rootlets. Odour peculiar and somewhat aromatic; taste acrid and bitterish.

Preparation.—Tinctura Arnicæ, 1 ounce to 1 pint.

ARSENII IODIDUM.

Iodide of Arsenium.

Synonyms.—Iodide of Arsenic; Arsenious Iodide.

AsI_3.

Obtained by the direct combination of iodine and metallic arsenium or by evaporating to dryness an aqueous mixture of arsenious and hydriodic acids.

Characters and Tests.—Small orange-coloured crystals, readily and almost entirely soluble in water and in rectified spirit. Its aqueous solution has a neutral reaction, and gives a yellow precipitate with sulphuretted hydrogen. Heated in a test-tube it almost entirely volatilises, violet vapours of iodine being set free.

Dose.—$\frac{1}{30}$ of a grain.

Preparation.—Liquor Arsenii et Hydrargyri Iodidi: about 1 grain in 100.

ASAFŒTIDA.

Asafœtida.

A gum-resin obtained by incision from the living root of Ferula Narthex, *Boiss.* (Narthex Asafœtida, *Falconer*); *Edinb. Roy. Soc. Trans.* vol. xxii. plates 20, 21; and of Ferula Scorodosma, *Benth. and Hook. fil.*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 127; and probably other species.

Characters and Tests.—Rarely in tears; usually in irregular masses varying in consistence and size, and composed of tears agglutinated together by darker-coloured and softer material. When broken or cut, the exposed surface has an amygdaloid appearance, the fractured tears being opaque and milk-white at first, but changing gradually to purplish-pink or reddish-pink, and finally to dull yellowish-brown. Taste bitter, acrid, and alliaceous; odour strong, alliaceous, and persistent. When triturated with water it forms a white emulsion. The freshly fractured surface of a tear when touched with nitric acid assumes for a short time a fine green colour. It should yield not more than 10 per cent. of ash. 50 to 60 per cent. should be soluble in rectified spirit.

Dose.—5 to 20 grains.

Preparations.

Enema Asafœtidæ . .	30 grains to 4 fluid ounces
Pilula Aloes et Asafœtidæ .	1 part in 4
,, Asafœtidæ Composita.	1 part in 3½
Spiritus Ammoniæ Fœtidus.	33 grains to 1 fluid ounce
Tinctura Asafœtidæ . .	54½ grains to 1 fluid ounce

ATROPINA.

Atropine.

Synonym.—Atropia.

$C_{17}H_{23}NO_3$.

An alkaloid obtained from Belladonna.

Take of

Belladonna Root, recently dried, and in coarse powder	2 pounds
Rectified Spirit	10 pints
Slaked Lime	1 ounce
Diluted Sulphuric Acid Carbonate of Potassium } of each	a sufficiency
Chloroform	3 fluid ounces
Purified Animal Charcoal	a sufficiency
Distilled Water	10 fluid ounces

Macerate the root in four pints of the spirit, for twenty-four hours, with frequent stirring. Transfer to a displacement apparatus, and exhaust the root with the remainder of the spirit by slow percolation. Add the lime to the tincture placed in a bottle, and shake them occasionally several times. Filter, add the diluted sulphuric acid in very slight excess to the filtrate, and filter again. Distil off three-fourths of the spirit, add to the residue the distilled water, evaporate as rapidly as possible, until the liquor is reduced to one-third of its volume and no longer smells of alcohol; then let it cool. Add very cautiously, with constant stirring, a solution of the carbonate of potassium so as nearly to neutralise the acid, care, however, being taken that an excess is not used. Set to rest for six hours, then filter, and add carbonate of potassium in such quantity that the liquid shall acquire a decided alkaline reaction. Place it in a bottle with the chloroform; mix well by frequently repeated brisk agitation, and pour the mixed liquids into a funnel furnished with a glass stopcock. When the chloroform has subsided, draw it off by the stopcock, and distil it on a water-bath from a retort connected with a condenser. Dissolve the residue in warm rectified spirit; digest the solution with a little animal charcoal; filter, evaporate, and cool until colourless crystals are obtained.

Characters and Tests.—In colourless acicular crystals, sparingly soluble in water, more readily in alcohol and in ether. Its solution in water has an alkaline reaction, gives a citron-yellow precipitate with perchloride of gold, has a bitter taste, and powerfully dilates the pupil. It leaves no ash when burned with free access of air. It is an active poison.

Preparations.

Atropinæ Sulphas . .	4 grains in 1 fluid ounce
,, Unguentum .	8 grains in 1 ounce

ATROPINÆ SULPHAS.

Sulphate of Atropine.

Synonyms.—Atropiæ Sulphas; Sulphate of Atropia.

Take of

Atropine	120 grains
Distilled Water	4 fluid drachms
Diluted Sulphuric Acid . . .	a sufficiency

Mix the atropine with the water and add the acid gradually, stirring them together until the alkaloid is dissolved and the solution is neutral. Evaporate it to dryness at a temperature not exceeding 100° F. (37°·8 C.)

Characters and Tests.—Nearly colourless, crystalline or pulverulent, soluble in water, forming a solution which is neutral to test-paper, and when applied to the eye dilates the pupil. It leaves no ash when burned with free access of air.

Intended for external application. It is a powerful poison.

Preparation.

Liquor Atropinæ Sulphatis .	1 grain in 100 fluid grains
Lamellæ Atropinæ	

AURANTII CORTEX.

Bitter-Orange Peel.

Synonym.—Aurantii Pericarpium.

The dried outer part of the rind or pericarp of Citrus ulgaris, *Risso* (Citrus Bigaradia, *Duhamel*).

Characters.—In thin pieces, or in curled bands or strips, glandular and of a deep orange-red colour externally, and white within from a portion of the inner spongy part of the rind not having been removed. It has an aromatic bitter taste, and pleasant aromatic odour.

Preparations.

Infusum Aurantii . . .	1 ounce to 1 pint
,, ,, Compositum .	½ ounce to 1 pint
,, Gentianæ Compositum .	110 grains to 1 pint
Spiritus Armoraciæ Compositus .	2½ ounces to 1 pint
Tinctura Aurantii . . .	2 ounces to 1 pint
,, Cinchonæ Composita .	1 ounce to 1 pint
,, Gentianæ Composita .	¾ ounce to 1 pint

AURANTII FRUCTUS.

Bitter Orange.

The ripe fruit of Citrus vulgaris, *Risso* (Citrus Bigaradia, *Duhamel*), *Hist. Nat. des Orang.* plate 30.

Characters.—Globular except at the two ends, where it is somewhat compressed; about the size of the sweet orange, but the pericarp is rougher, darker in colour, being deep orange-red or red, the pulp very bitter and sour, and the rind more aromatic and very bitter.

Preparation.—Tinctura Aurantii Recentis.

BALSAMUM PERUVIANUM.

Balsam of Peru.

A balsam exuded from the trunk of Myroxylon Pereiræ, *Klotzsch* (Toluifera Balsamum, var. *Baill.*); *Bentl. and Trim. Med. Pl.* vol. ii. plate 83, after the bark has been beaten, scorched, and removed.

Characters and Tests.—A liquid somewhat less viscid than treacle, appearing nearly black in bulk, but in thin layers deep orange-brown or reddish-brown and transparent. Its odour is agreeably balsamic, more especially when heated; and when swallowed it leaves a disagreeable burning sensation in the throat. It is insoluble in water, but soluble in chloroform or rectified spirit. Specific gravity between 1·137 and 1·150. Ten drops triturated with six grains of slaked lime produces a permanently soft mixture; and the mixture, on being warmed until all volatile matter is given off and until charring commences, gives no fatty odour. It should not diminish in volume when shaken with an equal bulk of water.

Dose.—10 to 15 minims.

BALSAMUM TOLUTANUM.

Balsam of Tolu.

A balsam which exudes from the trunk of Myroxylon Toluifera, *H. B. and K.* (Toluifera Balsamum, *Mill.*); *Bentl. and Trim. Med. Pl.* vol. ii. plate 84, after incisions have been made in the bark.

Characters.—When first imported it is a soft and tenacious solid, but it becomes harder by keeping, and then, in cold weather, is brittle like resin. In thin films it is transparent and of a yellowish-brown colour; and when pressed between pieces of glass with the aid of heat, and then examined with a lens, it exhibits an abundance of crystals of cinnamic acid. Odour highly fragrant, especially when warmed; taste somewhat aromatic and slightly acid. It is soluble in rectified spirit, and the solution has an acid reaction.

Dose.—10 to 20 grains.

Preparations.

Pilula Phosphori . . .	4 parts in 9
Syrupus Tolutanus . . .	1¼ ounce to 8 pounds
Tinctura Benzoini Composita .	11 grains to 1 fluid ounce
Tinctura Tolutana . . .	54½ grains to 1 fluid ounce

BEBERINÆ SULPHAS.

Sulphate of Beberine.

Synonym.—**Beberiæ Sulphas.**

Prepared from Nectandra or Bebeeru bark. It is probably a mixture of sulphates of beberine, $C_{36}H_{42}N_2O_6$, nectandrine, $C_{40}H_{46}N_2O_8$, and other alkaloids. It may be obtained by the following process:—

Take of

Bebeeru Bark, in coarse powder	1 pound
Sulphuric Acid . . .	½ fluid ounce
Slaked Lime	¾ ounce, or a sufficiency
Solution of Ammonia . .	a sufficiency
Rectified Spirit . . .	16 fluid ounces, or a sufficiency
Diluted Sulphuric Acid . .	a sufficiency
Water	1 gallon
Distilled Water . . .	a sufficiency

Add the sulphuric acid to the water; pour upon the bebeeru bark enough of this mixture to moisten it thoroughly; let it macerate for twenty-four hours; place it in a percolator, and pass through it the remainder of the acidulated water. Concentrate the acid liquor to the bulk of one pint, cool, and add gradually the lime in the form of milk of lime, agitating well and taking care that the fluid still retains a distinct acid reaction. Let it rest for two hours; filter through calico; wash the precipitate with a little cold distilled water, and to the filtrate add solution of ammonia until the fluid has a faint ammoniacal odour. Collect the precipitate on a cloth, wash it twice with ten ounces of cold water, squeeze it gently with the hand, and dry it by the heat of a water-bath. Pulverise the dry precipitate, put it into a flask with six ounces of the rectified spirit, boil, let it rest for a few minutes, and pour off the spirit. Treat the undissolved portion in a similar manner with fresh spirit until it is exhausted. Unite the spirituous solutions, add to them four ounces of distilled water, and distil so as to recover the greater part of the spirit. To the residue of the distillation add by degrees, and with constant stirring, diluted sulphuric acid till the fluid has a slight acid reaction. Evaporate the whole to complete dryness on the water-bath, pulverise the dry product, pour on it gradually one pint of cold distilled water, stirring diligently; filter through paper; evaporate the filtrate to the consistence of syrup, spread it in thin layers on flat porcelain or glass plates, and dry it at a temperature not exceeding 140° F. (60° C.) Preserve the product in stoppered bottles.

Characters and Tests.—In dark-brown thin translucent scales, yellow when in powder, with a strong bitter taste, soluble in water, yielding a clear brown solution, and in alcohol. Its watery solution gives a white precipitate with chloride of barium; and with caustic soda a yellowish-white precipitate, which is dissolved by agitating the mixture with twice its volume of ether. The ethereal solution, separated by a pipette and evaporated, leaves a yellow translucent residue, entirely soluble in dilute acids. Ignited with free access of air it burns without residue.

Dose.—1 to 10 grains.

BELÆ FRUCTUS.

Bael Fruit.

The dried half-ripe fruit of Ægle Marmelos, *Correa*; *Bentl. and Trim. Med. Pl.* vol. i. plate 55.

Characters.—Fruit roundish, about the size of a large orange, with a hard woody nearly smooth rind; usually imported in dried more or less twisted slices, or in fragments consisting of portions of the rind and adherent dried pulp and seeds. Rind about one-eighth of an inch thick, hard, and covered with a nearly smooth pale brown or greyish firmly adherent epicarp; the pulp firm and brittle, and of an orange-brown or cherry-red colour externally, but when broken it is seen to be nearly colourless internally. It has no odour, and its taste is simply mucilaginous and very slightly acid.

Preparation.

Extractum Belæ Liquidum	1 ounce to 1 fluid ounce

BELLADONNÆ FOLIA.

Belladonna Leaves.

The fresh leaves, with the branches to which they are attached, of Atropa Belladonna, *Linn.*; also the leaves separated from the branches and carefully dried; gathered, when the fruit has begun to form, from plants growing wild or cultivated in Britain. *Bentl. and Trim. Med. Pl.* vol. iii. plate 193.

Characters and Test.—Leaves alternate below, in pairs above of unequal size, all shortly stalked, from three to eight inches long, broadly ovate, acute, entire, smooth. The expressed juice of the fresh leaves, or an infusion of the dried leaves, dropped into the eye, dilates the pupil.

Preparations.

Extractum Belladonnæ	about 4 parts from 100
Succus Belladonnæ	
Tinctura Belladonnæ	1 ounce to 1 pint

BELLADONNÆ RADIX.

Belladonna Root.

The root of Atropa Belladonna, *Linn.*, from plants growing wild or cultivated in Britain, and carefully dried; or imported in a dried state from Germany.

Characters and Test.—In rough irregular branched pieces, from one to two feet long and from half an inch to two or more inches thick, generally marked at their upper end by the hollow bases of the stems which they once bore. The root is covered with a dirty grey or brownish integument, which is easily scraped off by the nail, when the exposed surface presents a whitish appearance. It breaks readily with a short fracture, and the surface is then seen to consist of a thin cortical portion of a yellowish or pale brown colour, separated by a dark line from a large central portion of a brownish colour, and marked throughout by scattered darker-coloured dots, but without evident medullary rays. An infusion dropped into the eye dilates the pupil.

Preparations.

Atropina	
Linimentum Belladonnæ .	1 ounce to 1 fluid ounce
Extractum Belladonnæ Alcoholicum.	

BENZOINUM.

Benzoin.

A balsamic resin obtained from Styrax Benzoin, *Dry.*; *Phil. Trans.* vol. lxxvii. plate 12; and probably from one or more other species of Styrax, *Linn.* It is generally procured by making deep incisions in the bark of the trees, and allowing the liquid that exudes to concrete by exposure to the air.

Characters.—In masses composed of loosely agglutinated tears, or more generally the tears are closely compacted together by a deep amber-brown, reddish-brown, or greyish-brown, translucent substance. In some specimens the tears are an inch or more in length, and when first broken they have an opaque milk-white appearance, so that the masses then present an almond-like character; while in others the white substance is very small in amount, and the masses when broken resemble reddish-brown granite. Benzoin is very brittle, softens readily by the warmth of the mouth; gives off, when heated, fumes of benzoic acid; has very little taste, but an agreeable balsamic odour resembling vanilla, or, in some cases, storax. It is soluble in rectified spirit and in solution of potash.

Preparations.

Acidum Benzoicum	
Adeps Benzoatus . . .	1 part to 50
Tinctura Benzoini Composita	44 grains to 1 fluid ounce
Unguentum Cetacei	

BISMUTHI CARBONAS.

Carbonate of Bismuth.

Synonym.—**Oxycarbonate of Bismuth.**

$(Bi_2O_2CO_3)_2,H_2O.$

Take of

Purified Bismuth, in small pieces .	2 ounces
Nitric Acid	4 fluid ounces
Carbonate of Ammonium . .	6 ounces
Distilled Water	a sufficiency

Mix the nitric acid with three ounces of distilled water, and add the bismuth in successive portions. When effervescence has ceased, apply for ten minutes a temperature approaching that of ebullition, and afterwards decant the solution from any insoluble matter that may be present. Evaporate the solution until it is reduced to two fluid ounces, and add this in small quantities at a time to a cold filtered solution of the carbonate of ammonium in two pints of distilled water, continually stirring during admixture. Collect the precipitate on a calico filter and wash it with distilled water until the washings pass tasteless. Remove now as much of the adhering water as can be separated from the precipitate by slight pressure with the hands, and finally dry the product at a temperature not exceeding 150° F. (65°·5 C.)

Characters and Tests.—A white powder, blackened by sulphuretted hydrogen; insoluble in water, but soluble with effervescence in nitric acid. When added to sulphuric acid coloured with sulphate of indigo, the colour of the latter is not discharged unless a relatively very minute proportion of the indigo solution be used. If to nitric acid mixed with half its volume of distilled water as much carbonate of bismuth be added as the acid will dissolve, one volume of this solution poured into twenty volumes of water will yield a white precipitate. The nitric acid solution gives no precipitate with solution of nitrate of silver, or becomes only slightly turbid, and stands the tests for impurities described in connection with 'Purified Bismuth.'

Dose.—5 to 20 grains.

BISMUTHI CITRAS.

Citrate of Bismuth.

$BiC_6H_5O_7$.

Take of

Subnitrate of Bismuth .	5½ ounces
Nitric Acid . . .	11 fluid ounces or a sufficiency
Citric Acid . . .	4 ounces
Bicarbonate of Sodium .	8 ounces
Distilled Water . .	a sufficiency

Heat the subnitrate of bismuth with the nitric acid until the salt is dissolved. Pour in some water, with constant stirring, until the cloudiness produced by the water no longer rapidly disappears. Dissolve the bicarbonate of sodium in distilled water, add the citric acid, boil until all gas is expelled, and then add the liquid to the clear or only faintly opalescent solution of bismuth until no further precipitate is produced. Heat to boiling, occasionally stirring. Set the whole aside to cool. When cold, filter, and wash the precipitate of citrate of bismuth until no free nitric acid remains. Dry the product over a water-bath.

Characters and Tests.—A white powder usually containing two and a half per cent. of absorbed moisture ; soluble in solution of ammonia to a clear or nearly clear liquid. The latter solution yields a black precipitate with sulphuretted hydrogen, and the filtrate from this precipitate, after it has been boiled until free from ammonia, and then filtered, gives a white precipitate when warmed with lime water ; the filtrate also affords no black colour round a crystal of sulphate of iron added together with an equal bulk of sulphuric acid. On strongly heating citrate of bismuth it chars, and on ignition yields a residue for the most part black but with a yellow surface, soluble in a little nitric acid. The latter solution, on being dropped into water, affords a white precipitate; and when the solution is treated in the manner described under 'Purified Bismuth' it should stand the tests for impurities there indicated. Ten grains dissolved in solution of ammonia and treated with sulphuretted hydrogen in excess yields a precipitate which, when washed and dried, weighs about seven grains.

Dose.—2 to 5 grains.

Preparation.—Liquor Bismuthi et Ammonii Citratis.

BISMUTHI ET AMMONII CITRAS.

Citrate of Bismuth and Ammonium.

Take of

Solution of Citrate of Bismuth and Ammonium . . . } 1 pint, or a sufficiency

Evaporate the solution over a water-bath to the consistence of a syrup. Spread the resulting fluid in thin layers on glass or porcelain plates, and dry at a temperature not exceeding 100° F. (37°·8 C.) Remove the scales, and preserve them in a stoppered bottle.

Characters and Tests.—Small, shining, translucent scales, having a slightly metallic taste, very soluble in water, yielding ammonia when warmed with solution of a fixed alkali. On ignition, the salt chars and yields a residue for the most part black but with a yellow surface, soluble in a little nitric acid. The latter solution should stand the tests for impurities described in connection with 'Purified Bismuth.' Ten grains dissolved in water and treated with sulphuretted hydrogen in excess yields a precipitate which, when washed and dried, weighs about six and a half grains.

Dose.—2 to 5 grains.

BISMUTHI OXIDUM.

Oxide of Bismuth.

Bi_2O_3.

Take of

Subnitrate of Bismuth	1 pound
Solution of Soda	4 pints

Mix and boil for five minutes; then, having allowed the mixture to cool and the oxide to subside, decant the supernatant liquid, wash the precipitate thoroughly with distilled water, and finally dry the oxide by the heat of a water-bath.

Characters and Tests.—A dull lemon-yellow powder. Heated to incipient redness it is scarcely diminished in weight. It is insoluble in water, but soluble in nitric acid mixed with half its volume of water, and if it be thus dissolved to saturation, the solution mixed with ten or twenty times its volume of water yields a white precipitate. The nitric acid solution gives no precipitate with solution of nitrate of silver, or becomes only slightly turbid, and it stands the tests for impurities described in connection with 'Purified Bismuth.'

Dose.—5 to 15 grains.

BISMUTHI SUBNITRAS.

Subnitrate of Bismuth.

$BiONO_3,H_2O$.

Synonym.—Oxynitrate of Bismuth.

Take of

Purified Bismuth, in small pieces .	2 ounces
Nitric Acid	4 fluid ounces
Distilled Water	a sufficiency

Mix the nitric acid with three ounces of distilled water, and add the bismuth in successive portions. When effervescence has ceased, apply for ten minutes a temperature approaching that of ebullition, and decant the solution from any insoluble matter that may be present. Evaporate the solution until it is reduced to two fluid ounces, and pour it into half a gallon of distilled water. When the precipitate which forms has subsided, decant the supernatant liquid, add half a gallon of distilled water to the precipitate, stir them well together, and after two hours decant off the liquid, collect the precipitate on a calico filter, enfold it with the calico and press it with the hands, and dry it at a temperature not exceeding 150° F. (65°·5 C.)

Characters and Tests.—A heavy white powder in minute crystalline scales, blackened by sulphuretted hydrogen; insoluble in water, but soluble without effervescence in nitric acid mixed with half its volume of distilled water, forming a solution which poured into water gives a white precipitate. It forms with sulphuric acid diluted with an equal bulk of water a solution which is blackened by sulphate of iron. The nitric acid solution gives only a faint opalescence with a very small proportion of hydrochloric acid, with solution of nitrate of silver remains clear or becomes only slightly turbid, and stands the tests for impurities described in connection with 'Purified Bismuth.' If ten grains be dissolved in nitric acid and the fluid be mixed with a solution of about twenty grains of citric acid and sufficient ammonia to give decided alkalinity, the mixture then being boiled while still kept faintly alkaline, no precipitate or opalescence is observable.

Dose.—5 to 20 grains.

Preparation.—Trochisci Bismuthi, 2 grains in each lozenge.

BISMUTHUM.

Bismuth.

A crystalline metal. In its crude state it is impure.

Preparation.—Bismuthum Purificatum.

BISMUTHUM PURIFICATUM.

Purified Bismuth.

Take of

Bismuth	10 ounces
Cyanide of Potassium	½ ounce
Sulphur	80 grains
Carbonate of Potassium, recently ignited	of each a sufficiency
Carbonate of Sodium, recently ignited	

Melt the bismuth in a crucible. Add the cyanide of potassium and sulphur, previously mixed. Heat the whole to low redness for about fifteen minutes, constantly stirring. Remove the crucible from the fire, and let it cool until the flux has solidified to a crust. Pierce two holes in the crust, and pour the still fluid bismuth into another crucible. Remelt this partially purified bismuth with about five per cent. of a mixture of equal parts of the dried carbonates of potassium and sodium, heating to bright redness and constantly stirring. Remove the crucible from the fire, cool, and pour out the bismuth into suitable moulds.

Characters and Tests.—A crystalline metal of a greyish-white colour, with a distinct roseate tinge. Specific gravity 9·83. Dissolved in a mixture of equal volumes of nitric acid and distilled water, it forms a solution which by evaporation yields colourless crystals that are decomposed on the addition of water, giving a white precipitate. If the mother liquor from which the crystals have been separated be evaporated with hydrochloric acid until all the nitric acid is dissipated, a little of the product yields no evidence of arsenium on being examined by the hydrogen test commonly known as Marsh's Test; no blue coloration on adding water and excess of ammonia, and no precipitate on filtering and saturating the ammoniacal filtrate with nitric acid; no white precipitate with diluted sulphuric acid; no red or black precipitate with sulphite of sodium; and no blue precipitate with ferrocyanide of potassium.

Preparations containing Bismuth.

Bismuthi Carbonas
,, Citras
et Ammonii Citras
Oxidum
Bismuthi Subnitras
Liquor Bismuthi et Ammonii Citratis
Trochisci Bismuthi

BORAX.

Borax.

Synonyms.—Sodæ Biboras; Pyroborate of Sodium.

$Na_2B_4O_7,10H_2O$.

A native salt. It is also made artificially by boiling together, in proper proportions, boric acid and carbonate of sodium.

Characters and Tests.—In transparent colourless crystals, sometimes slightly effloresced, with a weak alkaline reaction; insoluble in rectified spirit, soluble in water. A hot saturated solution, when acidulated with any of the mineral acids, lets fall, as it cools, a scaly crystalline deposit (boric acid), the solution of which in spirit burns with a green flame. 191 grains dissolved in ten fluid ounces of distilled water requires for saturation 1000 grain-measures of the volumetric solution of oxalic acid.

Dose.—5 to 40 grains.

Preparations.

Glycerinum Boracis . .	1 part in 6 by weight
Mel Boracis	56 grains in 1 ounce

Preparation for which Borax is used.—Acidum Boricum.

BROMUM.

Bromine.

A liquid non-metallic element, obtained from sea-water and from some saline springs.

Characters and Tests.—A dark brownish-red, very volatile liquid, with a strong and disagreeable odour. Its specific gravity is 2·97 to 3·14. At the common temperature of the air it gives off red vapours, and at a temperature of 135° to 145° F. (57°·2 to 62°·8 C.) it boils. Agitated with solution of soda in such proportion that the fluid remains very slightly alkaline, it forms a colourless liquid, which, if coloured by the further addition of a small quantity of the bromine, does not become blue on the subsequent addition of a cold solution of starch.

Official Bromides.

Acidum Hydrobromicum Dilutum
Ammonii Bromidum
Potassii Bromidum
Sodii Bromidum

BUCHU FOLIA.

Buchu Leaves.

The dried leaves of, 1. Barosma betulina, *Bart. and Wendl.*; *Berg u. Schmidt, Off. Gewächse,* plate 1 *f.*—2. Barosma crenulata, *Hook.*; *Bot. Mag.* vol. lxii. plate 3413.—3. Barosma serratifolia, *Willd.*; *Bentl. and Trim. Med. Pl.* vol. i. plate 47.

Characters.—Smooth, serrate, somewhat dentate, or crenate, and marked on the margins, and especially on their under surface, with oil-glands. Their colour is dull yellowish-green; odour strong, penetrating, and peculiar; taste aromatic, bitterish, and mint-like. 1. From half an inch to three-quarters of an inch long, cuneate or rhomboid-obovate, serrate-dentate, apex very blunt and usually recurved; texture more cartilaginous than in the other species. 2. From three-quarters to about an inch and a quarter long, thickish, oval-oblong or rhomboid-oval, somewhat blunt at the apex, narrowed at the base into a distinct petiole, finely serrate or crenate-serrate. 3. From an inch to an inch and a half long, linear-lanceolate, equally tapering to each end, actual apex truncate, sharply and closely serrate; texture thinner than in the other species.

Preparations.

Infusum Buchu . . .	1 ounce to 1 pint
Tinctura Buchu . . .	2½ ounces to 1 pint

BUTYL-CHLORAL HYDRAS.

Hydrate of Butyl-Chloral.

Synonyms.—**Hydrous Butyl-Chloral; Croton-Chloral Hydrate, wrongly so called.**

$C_4H_5Cl_3O,H_2O.$

Butyl-chloral, produced by the action of dry chlorine gas on aldehyd cooled to a temperature of 14° F. (–10° C.), separated by fractional distillation, and converted into the solid hydrous butyl-chloral by the addition of water.

Characters and Tests.—In pearly white crystalline scales, having a pungent but not acid odour, resembling that of hydrous chloral, and an acrid nauseous taste. It fuses at about 172° F. (77°·8 C.) to a transparent liquid, which, in cooling, commences to solidify at about 160° F. (71°·1 C.) Soluble in about fifty parts of water, in its own weight of glycerine and of rectified spirit, and nearly insoluble in chloroform. The aqueous solution is neutral or but slightly acid to litmus paper. It does not yield chloroform when heated with solutions of potash or soda or with milk of lime.

Dose.—5 to 15 grains.

CAFFEINA.

Caffeine.

Synonyms.—Caffeia; Theina; Guaranina.

$C_8H_{10}N_4O_2,H_2O.$

An alkaloid usually obtained from the dried leaves of Camellia Thea, *Link.*, or the dried seeds of Coffea arabica, *Linn.*, by evaporating aqueous infusions from which astringent and colouring matters have been removed.

Characters and Tests.—Colourless, silky, inodorous, acicular crystals. Soluble in 80 parts of cold water, the solution having a faintly bitter taste and being neutral to litmus. More soluble in boiling water and in rectified spirit, and very soluble in chloroform; sparingly soluble in ether. At 212° F. (100° C.) the crystals lose 8·49 per cent. of their weight, and at a higher temperature melt and volatilise without decomposition. Treated with a crystal of chlorate of potassium and a few drops of hydrochloric acid, and the mixture evaporated to dryness in a porcelain dish, a reddish residue results, which becomes purple when moistened with ammonia. In an aqueous solution of the alkaloid, tannic acid gives a white precipitate soluble in excess of the reagent.

Dose.—1 to 5 grains.

Preparation.—Caffeinæ Citras

CAFFEINÆ CITRAS.

Citrate of Caffeine.

$C_8H_{10}N_4O_2,H_3C_6H_5O_7$.

A weak compound of caffeine and citric acid.

Take of

Caffeine	1 ounce
Citric Acid	1 ounce
Distilled Water	2 ounces

Dissolve the citric acid in the water, and stir the caffeine into the heated solution. Evaporate to dryness on a water-bath, constantly stirring towards the end of the operation. Reduce to a fine powder.

Characters and Tests.—A white inodorous powder with an acid and faintly bitter taste and an acid reaction on litmus. It is soluble in a mixture of two parts of chloroform and one part of rectified spirit. With a little water it forms a clear syrupy solution, which on dilution yields a white precipitate of caffeine that redissolves when ten parts of water have been added. Heated in the air, the salt chars and burns, leaving a mere trace of ash. From a boiling aqueous solution excess of lime water gives a white precipitate. Tannic acid yields a white precipitate soluble in excess of the reagent. If to a little of the salt a crystal of chlorate of potassium be added, and a few drops of hydrochloric acid, and the mixture be evaporated to dryness in a porcelain dish, a reddish residue results, which becomes purple when moistened with solution of ammonia.

Dose.—2 to 10 grains.

CALAMINA PRÆPARATA.

Prepared Calamine.

Synonym.—Lapis Calaminaris Præparata.

Native carbonate of zinc, calcined in a covered earthen crucible at a moderate temperature, powdered, and freed from gritty particles by elutriation.

Characters and Tests.—A pale pinkish-brown powder, without grittiness; almost entirely soluble, with effervescence, in acids.

Preparation.—Unguentum Calaminæ.

CALCII CARBONAS PRÆCIPITATA.

Precipitated Carbonate of Calcium.

Synonyms.—Calcis Carbonas Præcipitata; Precipitated Carbonate of Lime.

$CaCO_3$.

Take of

Chloride of Calcium	5 ounces
Carbonate of Sodium . . .	13 ounces
Boiling Distilled Water . . .	a sufficiency

Dissolve the chloride of calcium and carbonate of sodium each in two pints of the water; well mix the two solutions and allow the precipitate to subside. Collect this on a calico filter, wash it with boiling distilled water until the washings cease to give a precipitate with nitrate of silver, and dry the product at the temperature of 212° F. (100° C.)

Characters and Tests.—A white crystalline powder, insoluble in water, dissolving in hydrochloric acid with effervescence. The solution, when neutralised by ammonia, lets fall a copious white precipitate on the addition of oxalate of ammonium. With diluted nitric acid it gives a clear solution, which, if perfectly neutral and deprived of carbonic acid by boiling, is neither precipitated by saccharated solution of lime added in excess, nor by solution of nitrate of silver.

Dose.—10 to 60 grains.

Preparation containing Precipitated Carbonate of Calcium.

Trochisci Bismuthi .	4 grains in each lozenge, nearly

CALCII CHLORIDUM.

Chloride of Calcium.

$CaCl_2,2H_2O$.

It may be formed by neutralising hydrochloric acid with carbonate of calcium, adding a little solution of chlorinated lime and slaked lime to the solution, filtering, evaporating until it becomes solid, and finally drying the salt at about 400° F. (204°·4 C.)

Characters and Tests.—In white agglutinated masses, dry but very deliquescent, evolves no chlorine or hypochlorous acid on the addition of hydrochloric acid, and is entirely soluble in twice its weight of water, also in alcohol. The aqueous solution is not precipitated by the addition of lime water.

Dose.—3 to 10 grains.

Preparation.—Liquor Calcii Chloridi.

CALCII HYDRAS.

Hydrate of Calcium.

Synonyms.—**Calcis Hydras; Hydrate of Lime; Slaked Lime.**

Hydrate of calcium, $Ca(HO)_2$, with some impurities.

Take of

Lime	2 pounds
Distilled Water	1 pint

Place the lime in a metal pot, pour the water upon it, and when vapour ceases to be disengaged cover the pot with its lid, and set it aside to cool. When the temperature has fallen to that of the atmosphere, put the slaked lime on an iron-wire sieve, and by gentle agitation cause the fine powder to pass through the sieve, rejecting what is left. Put the powder into a well-stoppered bottle, and keep it excluded as much as possible from the air. Slaked lime should be recently prepared.

Preparations.

Liquor Calcis | Liquor Calcis Saccharatus

CALCII HYPOPHOSPHIS.

Hypophosphite of Calcium.

Synonyms.—**Calcis Hypophosphis; Hypophosphite of Lime.**

$Ca(PH_2O_2)_2$.

Obtained by heating phosphorus and nearly twice its weight of hydrate of calcium with water until phosphuretted hydrogen gas ceases to be evolved, then filtering the liquid, separating uncombined lime with carbonic acid gas, and evaporating the remaining solution until the salt separates in a crystalline condition.

Characters and Tests.—A white crystalline salt, with a pearly lustre and a bitter nauseous taste. Insoluble in cold rectified spirit. Soluble in six parts of cold water, and only slightly more soluble in hot water. The crystals do not lose water when heated to 300° F. (148°·9 C.) Heated to redness they ignite, evolving spontaneously inflammable phosphuretted hydrogen, and leaving a reddish-coloured residue amounting to about 80 per cent. of the salt. Its aqueous solution yields with oxalate of ammonium a white precipitate insoluble in acetic acid but soluble in hydrochloric acid, and with perchloride of mercury a white and afterwards a grey precipitate; it yields no precipitate with acetate of lead. Five grains boiled for ten minutes with a solution of twelve grains of permanganate of potassium yields, on filtration, a nearly colourless solution.

Dose.—5 to 10 grains.

CALCII PHOSPHAS.

Phosphate of Calcium.

Synonyms.—Calcis Phosphas; Phosphate of Lime.

$Ca_3(PO_4)_2$.

Take of

Bone Ash	4 ounces
Hydrochloric Acid . . .	6 fluid ounces
Water	2 pints
Solution of Ammonia . .	12 fluid ounces, or a sufficiency
Distilled Water	a sufficiency

Digest the bone ash in the hydrochloric acid, diluted with a pint of water, until it is dissolved; boil for a few minutes; filter; add the remainder of the water, and afterwards the solution of ammonia, until the mixture acquires an alkaline reaction; and, having collected the precipitate on a calico filter, wash it with boiling distilled water as long as the liquid which passes through occasions a precipitate when dropped

into solution of nitrate of silver acidulated with nitric acid. Dry the washed product at a temperature not exceeding 212° F. (100° C.)

Characters and Tests.—A light white amorphous powder, insoluble in water, but soluble without effervescence in diluted nitric acid; the solution continues clear when a dilute solution of acetate of sodium is added in excess, but lets fall a white precipitate on the subsequent addition either of a little oxalate of ammonium or of perchloride of iron. The nitric solution is only rendered slightly turbid by solution of nitrate of silver. Of the recently dried powder, ten grains dissolves perfectly and without effervescence in diluted hydrochloric acid, and the solution yields with ammonia a white precipitate, insoluble in boiling solution of potash, and weighing nearly ten grains when washed and dried.

Dose.—10 to 20 grains.

Preparation containing Phosphate of Calcium.
Pulvis Antimonialis, 2 parts in 3.

CALCII SULPHAS.

Sulphate of Calcium.

Synonyms.—**Calcis Sulphas; Sulphate of Lime.**

Native sulphate of calcium ($CaSO_4,2H_2O$) rendered nearly anhydrous by heat.

Preparation.—Calx Sulphurata.

CALUMBÆ RADIX.

Calumba Root.

The dried transversely cut slices of the root of Jateorhiza Calumba, *Miers* (Cocculus palmatus, *DC.*); *Bentl. and Trim. Med. Pl.* vol. i. plate 13.

Characters and Test.—In irregular flattish circular or somewhat oval slices, from about an inch to two inches or more in diameter, and from one-eighth to half an inch or more in thickness. The cortical portion is thick, covered by a wrinkled brownish-yellow coat, and separated from the central portion, which is concave on both surfaces, by a fine dark-coloured line. The pieces have a greyish- or greenish-yellow colour, a feeble somewhat musty odour, bitter taste, break readily with a mealy fracture, and are easily reduced to powder. A decoction, when cold, is coloured bluish-black by solution of iodine.

Dose in powder.—5 to 20 grains.

Preparations.

Extractum Calumbæ	about 2½ ounces from 1 pound
Infusum Calumbæ	1 ounce to 1 pint
Mistura Ferri Aromatica	½ ounce to 16 fluid ounces
Tinctura Calumbæ	2½ ounces to 1 pint

CALX.

Lime.

An alkaline earth, oxide of calcium, CaO, with some impurities, obtained by calcining chalk or limestone so as to expel carbonic acid gas.

Characters and Tests.—In compact masses of a whitish colour, which readily absorb water, and which, when rather less than their weight of water is added, swell and fall into powder with the development of much heat. The powder obtained by this process of slaking, when agitated with distilled water, gives, after filtration, a clear solution which has an alkaline reaction, and yields a white precipitate with oxalate of ammonium. The powder obtained by slaking dissolves, without much residue and without effervescence, in diluted hydrochloric acid, and if the solution thus formed be evaporated to dryness, and the residue be redissolved in water, only a very scanty precipitate forms on the addition of saccharated solution of lime.

Preparation.—Calcii Hydras.

CALX CHLORINATA.

Chlorinated Lime.

A product obtained by exposing slaked lime to the action of chlorine gas as long as the latter is absorbed. It possesses bleaching and disinfecting properties. It may be regarded as consisting, chiefly, of a compound of hypochlorite and chloride of calcium ($CaCl_2O_2,CaCl_2$), or as a direct compound of chlorine and lime ($CaOCl_2$).

Characters and Tests.—A dull white powder with a feeble odour of chlorine, partially soluble in water. The solution evolves chlorine copiously upon the addition of oxalic acid, and deposits at the same time oxalate of calcium. When fresh, five grains mixed with fifteen grains of iodide of potassium, and dissolved in four fluid ounces of water, produces, when acidulated with one fluid drachm of hydrochloric acid, a reddish solution, which requires for the discharge of its colour at least 467 grain-measures of the volumetric solution of hyposulphite of sodium, corresponding to 33 per cent. of available chlorine.

Preparations.

Liquor Calcis Chlorinatæ . .	2 ounces to 1 pint

Preparations for which Chlorinated Lime is used.

Chloroform | Vapor Chlori

CALX SULPHURATA.

Sulphurated Lime.

Synonyms.—Calcii Sulphidum; Sulphide of Calcium.

A mixture containing not less than fifty per cent. of sulphide of calcium (CaS).

Take of

Sulphate of Calcium, in fine powder . .	7 ounces
Wood Charcoal, in fine powder . . .	1 ounce

Mix thoroughly. Heat to redness in an earthen crucible until the black colour has disappeared. Cool, and at once place the whitish residue in a stoppered bottle.

Characters and Tests.—A nearly white powder with a smell somewhat resembling that of sulphuretted hydrogen. If eight grains be added to a cold solution of fourteen grains of sulphate of copper in an ounce of water, a little hydrochloric acid be added, and the mixture be then well stirred and heated to a temperature approaching that of ebullition until all action has ceased, the filtered liquid should give no red colour with ferrocyanide of potassium.

Dose.—$\frac{1}{10}$ to 1 grain.

CAMBOGIA.

Gamboge.

A gum-resin obtained from Garcinia Hanburii, *Hook. fil.* (Garcinia Morella, *var.* pedicellata, *Hanbury*); *Trans. Linn. Soc. Lond.* vol. xxiv. plate 50.

Characters and Tests.—In cylindrical solid or hollow rolls longitudinally striated on the surface, and either distinct, or more or less agglutinated or folded together into masses; breaking with a conchoidal fracture, the fractured surface being opaque, smooth, glistening, and of a uniform reddish-yellow colour; powder bright yellow; no odour; taste very acrid. When rubbed with water forming a yellow emulsion; it is completely dissolved by the successive action of rectified spirit and water; and an emulsion made with boiling water and cooled, does not become green with the solution of iodine.

Dose.—1 to 4 grains.

Preparation.

Pilula Cambogiæ Composita .	1 part in 6, nearly

CAMPHORA.

Camphor.

A stearoptene obtained from the wood of Cinnamomum Camphora, *Nees and Eberm* (Camphora officinarum, *Nees*); *Nees, Plant. Med.* plate 130. Imported in the crude state, and purified by sublimation.

Characters.—In solid colourless translucent crystalline masses, which present numerous fissures when of any size; somewhat tough, but readily powdered if moistened with rectified spirit, ether, or chloroform; it has a powerful penetrating odour, and a pungent somewhat bitter taste, followed by a sensation of cold. It floats on water, burns readily with a bright smoky flame, volatilises somewhat rapidly even at ordinary temperatures, and sublimes entirely when heated; it is very slightly soluble in water, but readily soluble in rectified spirit, ether, or chloroform.

Dose.—1 to 10 grains.

Preparations containing Camphor.

Aqua Camphoræ	
Linimentum Aconiti	22 grains in 1 fluid ounce
,, Belladonnæ	22 grains in 1 fluid ounce
,, Camphoræ	1 in 5, nearly
,, ,, Compositum	54½ grains in 1 fluid ounce
,, Chloroformi	1 in 10
,, Hydrargyri	1 in 15
,, Opii	1 in 10, nearly
,, Saponis	1 in 21
,, Sinapis Compositum	1 in 16
,, Terebinthinæ	1 in 20
,, ,, Aceticum	1 in 11
Spiritus Camphoræ	1 in 10
Tinctura Camphoræ Composita	1½ grain in 1 fluid ounce
Unguentum Hydrargyri Compositum	1½ ounce in 13½ ounces

CANELLÆ CORTEX.

Canella Bark.

The bark of Canella alba, *Murray*, deprived of its corky layer and dried; *Bentl. and Trim. Med. Pl.* vol. i. plate 26.

Characters.—In quills or irregular pieces which are generally more or less twisted and broken longitudinally; it has a pale orange-brown or buff colour externally, is commonly marked by roundish depressions or scars, and sometimes the remains of the corky layer may be seen here and there as silvery grey patches; internally its colour is paler, being whitish or yellowish-white. It has an agreeable odour somewhat resembling a mixture of cloves and cinnamon, and a pungent bitter acrid taste.

Preparation.

Vinum Rhei . . . . 60 grains to 1 pint

CANNABIS INDICA.

Indian Hemp.

The dried flowering or fruiting tops of the female plants of Cannabis sativa, *Linn.*; *Berg u. Schmidt, Off. Gewächse*, plate xix. *b*; grown in India, and from which the resin has not been removed. It is known in India as Gunjah or Ganga.

Characters.—In small more or less aggregated masses, from about one and a half to two and a half inches in length, and consisting of the tops of one or more alternate branches bearing the remains of the flowers and smaller leaves with a few ripe fruits, and the whole pressed together by adhesive resinous matter; or, it is composed of straight stiff woody stems several inches long, surrounded by the branched flower-stalks. It is rough to the touch, very brittle, of a dusky-green colour, with scarcely any taste, but having a faint, peculiar, narcotic, not unpleasant odour.

Preparations.

Extractum Cannabis Indicæ	
Tinctura Cannabis Indicæ .	22 grains of extract in fluid ounce, nearly

CANTHARIS.

Cantharides.

The beetle, Cantharis vesicatoria, *De Geer*, dried.

Characters.—From about three-quarters of an inch to an inch long, and a quarter of an inch broad, with two long elytra or wing-sheaths of a shining coppery-green colour, under which are two thin brownish transparent membranous wings; odour strong and disagreeable; powder greyish-brown, containing shining green particles.

Preparations.

Acetum Cantharidis . . .	2 ounces to 1 pint
Charta Epispastica	
Emplastrum Calefaciens . .	1 part in 24, nearly
,, Cantharidis . .	1 part in 8
Liquor Epispasticus . . .	1 ounce to 4 fluid ounces
Tinctura Cantharidis . . .	5½ grains to 1 fluid ounce
Unguentum Cantharidis . .	1 part in 8, nearly

CAPSICI FRUCTUS.

Capsicum Fruit.

The dried ripe fruit of Capsicum fastigiatum, *Blume; Wight, Icones Plant. Ind. Orient.* vol. iv. plate 1617.

Characters.—From about half to three-quarters of an inch long and a quarter of an inch in diameter; somewhat shrivelled, oblong-conical, obtuse, and composed of a smooth shining brittle thin translucent pericarp of a dull orange-red colour, enclosing several small roundish or ovoid flat seeds. Taste of both pericarp and seeds intensely pungent; odour peculiar and pungent.

Preparation.

Tinctura Capsici . .	16½ grains to 1 fluid ounce

CARBO ANIMALIS.

Animal Charcoal. Bone Black.

The residue of bones which have been exposed to a red heat without the access of air. Consists principally of carbon, and phosphate and carbonate of calcium.

Preparation.—Carbo Animalis Purificatus.

CARBO ANIMALIS PURIFICATUS.

Purified Animal Charcoal.

Animal charcoal from which the earthy salts have been almost wholly removed. Product, about ten per cent.

Take of

Bone Black, in powder	16 ounces
Hydrochloric Acid	10 fluid ounces
Distilled Water	a sufficiency

Mix the hydrochloric acid with a pint of the water, and add the bone black, stirring occasionally. Digest at a moderate temperature for two days, agitating from time to time; collect the undissolved charcoal on a calico filter, and wash with distilled water until what passes through gives scarcely any precipitate with nitrate of silver. Dry the charcoal, and then heat it to redness in a closely covered crucible.

Characters and Tests.—A black pulverulent substance; inodorous and almost tasteless. Ten or twelve grains well shaken with an ounce of water containing about a fluid drachm of 'solution of litmus' removes the dissolved colouring matter; the mixture, when thrown upon a filter, passing through colourless. When burned at a high temperature with a little red oxide of mercury and free access of air, it leaves not more than about two per cent. of residue.

Dose.—20 to 60 grains.

CARBO LIGNI.

Wood Charcoal.

Wood charred by exposure to a red heat without access of air.

Characters and Tests.—In black brittle porous easily powdered masses, without taste or smell, very light, and retaining the form and texture of the wood from which it was obtained. When burned at a high temperature with free access of air, it leaves not more than about two per cent. of ash.

Dose.—20 to 60 grains.

Preparation.—Cataplasma Carbonis.

CARDAMOMI SEMINA.

Cardamoms.

The dried ripe seeds of the Malabar Cardamom, Elettaria Cardamomum, *Maton, Trans. Linn. Soc.* vol. x. plates 4, 5. The seeds are best kept in their pericarps, in which condition they are imported; but when required for use they should be separated and the pericarps rejected.

Characters.—About one-sixth of an inch long, irregularly angular, transversely wrinkled, dark reddish-brown externally, whitish within; odour and taste agreeably warm and aromatic. The pericarps in which they are enclosed vary from about two-fifths of an inch to nearly an inch long, and from about one-fifth to two-fifths of an inch broad; they are ovoid or oblong, obtusely triangular, shortly beaked, rounded at the base, brownish-yellow, longitudinally striated, and without taste or odour.

Preparations.

Extractum Colocynthidis Compositum .	1 part in 27, nearly
Pulvis Cinnamomi Compositus . .	1 part in 3
,, Cretæ Aromaticus . . .	1 part in 44
Tinctura Cardamomi Composita . .	¼ ounce to 1 pint
,, Gentianæ Composita . .	¼ ounce to 1 pint
,, Rhei	¼ ounce to 1 pint
Vinum Aloes	80 grains to 1 pint

CARUI FRUCTUS.

Caraway Fruit.

The dried fruit of Carum Carui, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 121.

Characters.—The fruit is usually separated into its two constituent mericarps, which vary from about one-sixth to one-fourth of an inch long; they are slightly curved, somewhat tapering at each end, brown, with five paler longitudinal ridges, and in each of the intervening spaces there is a large and conspicuous vitta. Odour agreeably aromatic; taste pleasant, sweetish, and spicy.

Preparations.

Aqua Carui	1 pound to 1 gallon
Confectio Opii	1 part in 10, nearly
,, Piperis	3 parts in 20
Oleum Carui	
Pulvis Opii Compositus . . .	1 part in 2½
Tinctura Cardamomi Composita . .	¼ ounce to 1 pint
,, Sennæ	½ ounce to 1 pint

CARYOPHYLLUM.

Clove.

The dried flower-bud of Eugenia caryophyllata, *Thunb.* (Caryophyllus aromaticus, *Linn.*); *Bot. Mag.* vol. liv. plates 2749, 2750.

Characters.—Over half an inch long, and consisting of a dark-brown wrinkled sub-cylindrical and somewhat angular calyx tube, which tapers below, and is surmounted by four teeth, between which the paler-coloured petals, enclosing the numerous stamens and style, are rolled up in the form of a ball. Odour strong, fragrant, and spicy; taste very pungent and aromatic. It emits oil when indented with the nail.

Preparations.

Infusum Aurantii Compositum .	56 grains to 1 pint
,, Caryophylli . . .	½ ounce to 1 pint
Mistura Ferri Aromatica . .	¼ ounce to 16 fluid ounces
Oleum Caryophylli	
Vinum Opii	75 grains to 1 pint

CASCARILLÆ CORTEX.

Cascarilla Bark.

The dried bark of Croton Eluteria, *J. J. Bennett; Pharmaceutical Journal,* 2nd ser. vol. iv. page 150, plate 1.

Characters.—In quills, from one to three or more inches in length, and from one-sixth to half an inch in diameter, covered with a dull-brown easily separable corky layer, which is more or less coated with a silvery- or greyish-white lichen; fracture brown, short, and resinous. It has a warm and nauseously bitter taste; and an agreeable aromatic odour, more especially when burned.

Preparations.

Infusum Cascarillæ . . .	2 ounces to 1 pint
Tinctura Cascarillæ . . .	2½ ounces to 1 pint

CASSIÆ PULPA.

Cassia Pulp.

The pulp obtained from the recently imported pods of Cassia Fistula, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 87.

Characters.—The pods are from a foot and a half to two feet long, and nearly one inch in diameter, shortly stalked, pointed, blackish-brown, very hard, indehiscent, but the sutures marked by two smooth longitudinal bands; divided internally by thin transverse partitions into numerous cells, each containing a solitary smooth flattish-oval reddish-brown seed, more or less surrounded by pulp, and hence the pods should not rattle when shaken. The pulp is viscid, blackish-brown, sweet in taste, and somewhat sickly in odour. When obtained separately the pulp frequently contains the seeds and the partitions or dissepiments; these should be removed when it is used for pharmaceutical purposes.

Preparation.—Confectio Sennæ, 1 part in 8, nearly.

CATAPLASMA CARBONIS.

Charcoal Poultice.

Take of

Wood Charcoal, in powder	½ ounce	or . .	1 part
Crumb of Bread .	2 ounces	,, . .	4 parts
Linseed Meal .	1½ ounce	,, . .	3 parts
Boiling Water .	10 fluid ounces . .	,, . .	20 fluid parts

Macerate the bread in the water for ten minutes near the fire, then mix, and add the linseed meal gradually, stirring the ingredients, that a soft poultice may be formed. Mix with this half the charcoal, and sprinkle the remainder on the surface of the poultice.

CATAPLASMA CONII.

Hemlock Poultice.

Take of

Juice of Hemlock	1 fluid ounce	or	1 fluid part
Linseed Meal	4 ounces	,,	4 parts
Boiling Water	10 fluid ounces	,,	10 fluid parts

Evaporate the hemlock juice to half its volume, add this to the linseed meal and water previously mixed, and stir them together.

CATAPLASMA FERMENTI.

Yeast Poultice.

Take of

Beer Yeast	6 fluid ounces	or	3 fluid parts
Wheaten Flour	14 ounces	,,	7 parts
Water, heated to 100° F. (37°·8 C.)	6 fluid ounces	,,	3 fluid parts

Mix the yeast with the water, and stir in the flour. Place the mass near the fire till it rises.

CATAPLASMA LINI.

Linseed Poultice.

Take of

Linseed Meal	4 ounces	or	2 parts
Boiling Water	10 fluid ounces	,,	5 fluid parts

Mix the linseed meal gradually with the water, with constant stirring.

CATAPLASMA SINAPIS.

Mustard Poultice.

Take of

Mustard, in powder	2½ ounces, or a sufficiency
Linseed Meal	2½ ounces
Boiling Water Water	of each a sufficiency

Mix the mustard with two to three ounces of lukewarm water; mix the linseed meal with six to eight ounces of boiling water; add the former to the latter, and stir them together.

CATAPLASMA SODÆ CHLORINATÆ.

Chlorine Poultice.

Take of

Solution of Chlorinated Soda	2 fluid ounces	or	1 fluid part
Linseed Meal	4 ounces	,,	2 parts
Boiling Water	8 fluid ounces	,,	4 fluid parts

Mix the linseed meal gradually with the water, and add the solution of chlorinated soda, with constant stirring.

CATECHU.

Catechu.

Synonym.—Catechu Pallidum.

An extract of the leaves and young shoots of Uncaria Gambier, *Roxb. Trans. Linn. Soc.* vol. ix. plate 22.

Characters and Tests.—In cubes, or masses of variable size formed of more or less agglutinated cubes. The separate cubes are usually about an inch square on each side, deep reddish-brown externally, pale cinnamon-brown internally, dry, breaking readily with a dull earthy fracture, and when viewed under the microscope presenting myriads of very small acicular crystals. Taste at first bitter and very astringent, but subsequently sweetish; no odour. Entirely soluble in boiling water. The decoction when cool is not rendered blue by iodine.

Dose.—10 to 30 grains.

Preparations.

Infusum Catechu	16 grains to 1 fluid ounce
Pulvis Catechu Compositus	1 part in 2½
Tinctura Catechu	54½ grains to 1 fluid ounce
Trochisci Catechu	1 grain in each lozenge

CERA ALBA.

White Wax.

Yellow wax bleached by exposure to moisture, air, and light.

Characters and Tests.—Hard, nearly white, translucent. It should respond to the tests for yellow wax.

Preparations.

Charta Epispastica	Unguentum Cetacei
Unguentum Simplex	

CERA FLAVA.

Yellow Wax.

Prepared from the honeycomb of the Hive Bee, Apis mellifica, *Linn.*

Characters and Tests.—Firm, breaking with a granular fracture, yellowish, having an agreeable honey-like odour. Not unctuous to the touch. Should be readily and entirely soluble in hot oil of turpentine. Should not yield more than three per cent. to cold rectified spirit, and nothing to water or to a boiling solution of soda, the two latter fluids after filtration neither being turbid nor yielding a precipitate on the addition of hydrochloric acid. Specific gravity 0·950 to 0·970. Melts at 146° F. (63°·3 C.) when tested in the following manner. Liquefy a few grains, and draw a little of the fluid up into a capillary tube; fix a piece of the filled capillary tube to the bulb of a thermometer by thread; immerse the bulb and tube in a beaker of water and heat the latter gently; at the moment the opaque rod of wax becomes transparent, note the temperature. The solidifying point is two to three degrees lower than the melting point. Boiling water in which it has been agitated is not, when cooled, rendered blue by iodine.

Preparations.

Cera Alba
Emplastrum Calefaciens
,, Cantharidis
,, Galbani
,, Picis
,, Saponis Fuscum
Pilula Phosphori
Unguentum Cantharidis
,, Hydrargyri Compositum
,, Picis Liquidæ
,, Resinæ
,, Sabinæ
,, Terebinthinæ

CEREVISIÆ FERMENTUM.

Beer Yeast.

The ferment obtained in brewing beer, and produced by Saccharomyces (Torula, *Turpin*) cerevisiæ, *Meyen.*

Characters.—Viscid, semifluid, frothy, exhibiting under the microscope numerous isolated roundish or oval cells, or short branched filaments composed of united cells; odour peculiar, taste bitter.

Dose.—$\frac{1}{2}$ to 1 ounce.

Preparation.—Cataplasma Fermenti.

CERII OXALAS.

Oxalate of Cerium.

$CeC_2O_4,3H_2O$.

A salt which may be obtained as a precipitate by adding solution of oxalate of ammonium to a soluble salt of cerium. It usually contains some oxalate of lanthanum and oxalate of didymium.

Characters and Tests.—A white granular powder, insoluble in water, decomposed at a dull red heat into a reddish-brown powder which dissolves completely and without effervescence in boiling hydrochloric acid, and the resulting solution gives with solution of sulphate of potassium a white crystalline precipitate. If the salt be boiled with solution of potash and filtered, the filtrate is not affected by solution of chloride of ammonium, but when supersaturated with acetic acid it gives with chloride of calcium a white precipitate, which is soluble in hydrochloric acid. Ten grains, when incinerated, lose 5·2 grains in weight.

Dose.—1 to 2 grains.

CETACEUM.

Spermaceti.

A concrete fatty substance, obtained, mixed with oil, from the head of the Sperm Whale, Physeter macrocephalus, *Linn.* It is separated from the oil by filtration and pressure, and afterwards purified.

Characters and Tests.—Crystalline, pearly-white, glistening, translucent, with little taste or odour, reducible to powder by the addition of a little rectified spirit. It is insoluble in water, but soluble in ether, chloroform, or boiling rectified spirit. Scarcely unctuous to the touch. Melting point 111° to 122° F. (43°·9 to 50° C.) when tested by the method described in connection with Cera Flava.

Preparations.

Charta Epispastica	Unguentum Cetacei

CETRARIA.

Iceland Moss.

Synonym.—Iceland Lichen.

The dried lichen, Cetraria islandica, *Ach.*; *Bentl. and Trim. Med. Pl.* vol. iv. plate 302.

Characters.—Foliaceous, much branched in an irregular dichotomous manner into fringed obtuse or truncate flattened lobes; crisp, smooth, and usually brownish- or greyish-white above, whitish beneath, and marked irregularly with small white depressed spots. Almost odourless when dry, but when moistened with water having a feeble seaweed-like odour; taste mucilaginous and slightly bitter. A strong decoction gelatinises on cooling.

Preparation.—Decoctum Cetrariæ, 1 ounce to 1 pint.

CHARTA EPISPASTICA.

Blistering Paper.

Take of

White Wax	4 ounces	or	16 parts
Spermaceti	1½ ounce	,,	6 parts
Olive Oil	2 fluid ounces	,,	8 fluid parts
Resin	¾ ounce	,,	3 parts
Canada Balsam	¼ ounce	,,	1 part
Cantharides, in powder	1 ounce	,,	4 parts
Distilled Water	6 fluid ounces	,,	24 fluid parts

Digest all the ingredients, excepting the Canada balsam, in a water-bath for two hours, stirring them constantly, then strain, and separate the plaster from the watery liquid. Mix the Canada balsam with the plaster melted in a shallow vessel, and pass strips of paper over the surface of the hot liquid, so that one side of the paper shall receive a thin coating of plaster.

It may be convenient to employ paper ruled so as to indicate divisions each of which is one square inch.

CHARTA SINAPIS.

Mustard Paper.

Take of

Mustard, in powder	1 ounce
Solution of Gutta Percha	2 fluid ounces, or a sufficiency

Mix the mustard with the gutta-percha solution so as to form a semifluid mixture, and having poured this into a shallow flat-bottomed vessel, such as a dinner-plate, pass strips of cartridge-paper over its surface so that one side of the paper shall receive a thin coating of the mixture Then lay the paper on a table with the coated side upwards, and let it remain exposed to the air until the coating has hardened.

Before being applied to the skin, let the mustard paper be immersed for a few seconds in tepid water.

CHIRATA.

Chiretta.

The dried plant, Ophelia Chirata, *Griseb.*; *Wallich, Plant. Asiat.* (*Gentiana Chirata*), vol. iii. plate 252. Collected when the fruit begins to form.

Characters.—Root two to three inches long, usually unbranched. Stem three feet or more long, rounded below and slightly quadrangular above, branched in a dichotomous manner, smooth, orange-brown or purplish. Leaves ovate, 5–7-ribbed; flowers small, numerous, panicled. No odour; taste very bitter. The stem, except in the lower part, consists of a thin woody ring, enclosing a large continuous easily separable pith of a yellowish colour.

Preparations.

Infusum Chiratæ	½ ounce to 1 pint
Tinctura Chiratæ	2½ ounces to 1 pint

CHLORAL HYDRAS.

Hydrate of Chloral.

Synonym.--Hydrous Chloral.

C_2HCl_3O,H_2O.

Chloral, produced by the action of dry chlorine gas on anhydrous alcohol, purified by treatment, first with sulphuric acid and afterwards with a small quantity of lime, and finally converted into hydrous chloral by the addition of water.

Characters and Tests.—In colourless crystals, which do not deliquesce on exposure to air. It has a pungent but not an acrid odour, and a pungent and rather bitter taste. On the gentle application of heat it fuses to a colourless transparent liquid, which, as it cools, begins to solidify at a temperature of about 120° F. (48°·9 C.) It boils in a test-tube, with pieces of broken glass immersed in it, at from 202° to 206° F. (94°·4 to 96°·7 C.), and at a slightly higher temperature it volatilises on platinum foil without residue. Soluble in less than its own weight of distilled water, rectified spirit, or ether, and in four times its weight of chloroform. The aqueous solution is neutral or but slightly acid to test-paper. A solution in chloroform when mixed by agitation with sulphuric acid does not impart colour to the acid. 100 grains of hydrate of chloral dissolved in an ounce of distilled water and mixed with 30 grains of slaked lime, submitted to careful distillation with a suitable apparatus, should yield not less than 70 grains of chloroform.

Dose.—5 to 30 grains.

Preparation.

Syrupus Chloral .	10 grains in 1 fluid drachm.

CHLOROFORMUM.

Chloroform.

$CHCl_3$.

It may be made as follows:—

Take of

Chlorinated Lime	10 pounds
Rectified Spirit	30 fluid ounces
Slaked Lime	a sufficiency
Water	3 gallons
Sulphuric Acid	a sufficiency
Chloride of Calcium, in small fragments	2 ounces
Distilled Water	9 fluid ounces
Ethylic Alcohol	a sufficiency

Place the water and the spirit in a capacious still, and raise the mixture to the temperature of 100° F. (37°·8 C.) Add the chlorinated lime and five pounds of the slaked lime, mixing thoroughly. Connect the still with a condensing worm encompassed by cold water, and terminating in a narrow-necked receiver; and apply heat so as to cause distillation, taking care to withdraw the fire the moment that the process is well established. When the distilled product measures fifty ounces, the receiver is to be withdrawn. Pour its contents into a gallon bottle half filled with water, mix well by shaking, and set at rest for a few minutes, when the mixture will separate into two strata of different densities. Let the lower stratum, which constitutes crude chloroform, be washed by agitating it in a bottle with three ounces of the distilled water. Allow the chloroform to subside, withdraw the water, and repeat the washing with the rest of the distilled water, in successive quantities of three ounces at a time. Agitate the washed chloroform for five minutes in a bottle with an equal volume of pure sulphuric acid, allow the mixture to settle, and transfer the upper stratum of liquid to a bottle containing a little alkaline water. After agitation transfer the chloroform to a dry bottle containing the chloride of calcium mixed with half an ounce of quick lime. Mix well by agitation. After the lapse of an hour decant the chloroform into a flask, connect the flask with a Liebig's condenser, and distil over the pure chloroform by means of a water-bath. Add one per cent. by weight of ethylic alcohol. Preserve the product in a cool place, in a bottle furnished with an accurately ground stopper.

The lighter liquid which floats on the crude chloroform after its agitation with water, and the washings with distilled water, should be preserved, and employed in a subsequent operation.

Characters and Tests.—A limpid colourless liquid, of an agreeable ethereal odour, and sweet taste. Dissolves in alcohol and ether in all proportions, and in water to the extent of one volume in two hundred. Specific gravity 1·497. After agitation with sulphuric acid the latter is not coloured to any greater extent than that producible by absolute chloroform to which one per cent. of ethylic alcohol has been added. It leaves no residue and no unpleasant odour after evaporation.

Dose.—3 to 10 minims.

Preparations.

Aqua Chloroformi . . .	1 volume in 200
Linimentum Chloroformi . .	1 volume in 2
Spiritus Chloroformi . . .	1 volume in 20
Tinctura Chloroformi Composita .	1 volume in 10
,, ,, et Morphinæ.	1 volume in 8

CHRYSAROBINUM.

Chrysarobin.

Synonyms.—Araroba Powder; Goa Powder.

The medullary matter of the stem and branches of Andira araroba, *Aguiar.*; *Pharm. Journ.* 3rd ser. vol. x. p. 43, plate; dried and powdered; containing more or less chrysophanic acid according to age and condition, and yielding much chrysophanic acid by oxidation.

Characters and Tests.—A light brownish-yellow, minutely crystalline powder, tasteless and inodorous. Very sparingly

soluble in water, but almost entirely soluble in 150 parts of hot rectified spirit. On heating it melts and partially sublimes in yellow vapours, leaving a charred residue, which entirely disappears on ignition in air. It dissolves in sulphuric acid to form a yellow to orange-red solution, and in solution of caustic potash to form a yellow to reddish fluorescent solution which becomes carmine by absorption of oxygen from the air.

Dose.—$\frac{1}{6}$ to $\frac{1}{2}$ grain.

Preparation.—Unguentum Chrysarobini.

CIMICIFUGÆ RHIZOMA.

Cimicifuga.

Synonym.—Actææ Radix.

The dried rhizome and rootlets of Cimicifuga racemosa, *Elliott* (Actæa racemosa, *Linn.*); *Bentl. and Trim. Med. Pl.* vol. i. plate 8.

Characters and Test.—The rhizome is from about two to six inches long, and from half an inch to an inch thick, hard, somewhat flattened-cylindrical in form, having on its upper surface the remains of several aerial stems, and below numerous small wiry brittle branched rootlets, which in commercial specimens are more or less broken off. Both rhizome and rootlets are brownish-black, almost odourless, and of a bitter slightly acrid taste. Their fracture is close, that of the rootlets presenting a thick bark, and a central axis with from three to five, usually four, converging woody wedges, so as to assume a triangular, cross-like, or stellate appearance. An infusion is blackened by a persalt of iron.

Preparations.

Extractum Cimicifugæ Liquidum | Tinctura Cimicifugæ

CINCHONÆ CORTEX.

Cinchona Bark.

The dried bark of Cinchona Calisaya, *Weddell*; Cinchona officinalis, *Linn.*; Cinchona succirubra, *Pavon*;

Cinchona lancifolia, *Mutis*; and other species of Cinchona from which the peculiar alkaloids of the bark may be obtained.

Preparations.

Cinchonidinæ Sulphas	Quininæ Hydrochloras
Cinchoninæ Sulphas	,, Sulphas

(Salts of quinine and cinchonine may also be obtained from some species of Remijia, DC.)

CINCHONÆ RUBRÆ CORTEX.

Red Cinchona Bark.

The dried bark of the stem and branches of cultivated plants of Cinchona succirubra, *Pavon*; *Howard's Illustrations, Nueva Quinologia,* plate 7.

Characters.—In quills or more or less incurved pieces, coated with the periderm, and varying in length from usually a few inches to a foot or more—the bark itself from about one-tenth to a quarter of an inch thick, or rarely more; outer surface more or less rough from longitudinal furrows and ridges, or transverse cracks, annular fissures, and warts, and brownish or reddish-brown in colour; inner surface brick-red or deep reddish-brown, irregularly and coarsely striated; fracture nearly close in the smaller quills, but finely fibrous in the larger ones; powder brownish or reddish-brown; no marked odour; taste bitter and somewhat astringent.

Test.—When used for purposes other than that of obtaining the alkaloids or their salts, it should yield between five and six per cent. of total alkaloids, of which not less than half shall consist of quinine and cinchonidine, as estimated by the following methods:—

1. *For Quinine and Cinchonidine.*—Mix 200 grains of red cinchona bark, in No. 60 powder, with sixty grains of hydrate of calcium; slightly moisten the powders with half an ounce of water; mix the whole intimately in a small porcelain dish or mortar; allow the mixture to stand for an hour or two,

when it will present the characters of a moist, dark brown powder, in which there should be no lumps or visible white particles. Transfer this powder to a six-ounce flask, add three fluid ounces of benzolated amylic alcohol, boil them together for about half an hour, decant and drain off the liquid on to a filter, leaving the powder in the flask; add more of the benzolated amylic alcohol to the powder, and boil and decant as before; repeat this operation a third time; then turn the contents of the flask on to the filter, and wash by percolation with more of the benzolated amylic alcohol until the bark is exhausted. If, during the boiling, a funnel be placed in the mouth of the flask, and another flask filled with cold water be placed in the funnel, this will form a convenient condenser which will prevent the loss of more than a small quantity of the boiling liquid. Introduce the collected filtrate, while still warm, into a stoppered glass separator; add to it twenty minims of diluted hydrochloric acid, mixed with two fluid drachms of water; shake them well together, and when the acid liquid has separated this may be drawn off, and the process repeated with distilled water slightly acidulated with hydrochloric acid, until the whole of the alkaloids have been removed. The acid liquid thus obtained will contain the alkaloids as hydrochlorates, with excess of hydrochloric acid. It is to be carefully and exactly neutralised with ammonia while warm, and then concentrated to the bulk of three fluid drachms. If now about fifteen grains of tartarated soda, dissolved in twice its weight of water, be added to the neutral hydrochlorates, and the mixture stirred with a glass rod, insoluble tartrates of quinine and cinchonidine will separate completely in about an hour; and these collected on a filter, washed, and dried, will contain eight-tenths of their weight of the alkaloids, quinine and cinchonidine, which, divided by 2, represents the percentage of those alkaloids. The other alkaloids will be left in the mother-liquor.

2. *For total alkaloids.*—To the mother-liquor from the preceding process add solution of ammonia in slight excess. Collect, wash, and dry the precipitate, which will contain the other alkaloids. The weight of this precipitate divided by 2,

and added to the percentage weight of the quinine and cinchonidine, gives the percentage of total alkaloids.

Preparations.

Decoctum Cinchonæ	27½ grains to 1 fluid ounce
Extractum Cinchonæ Liquidum	about 1 ounce to 1 fluid ounce
Infusum Cinchonæ Acidum	22 grains to 1 fluid ounce
Mistura Ferri Aromatica	1 ounce to 16 fluid ounces
Tinctura Cinchonæ	88 grains to 1 fluid ounce
,, ,, Composita	2 ounces to 1 pint

CINCHONIDINÆ SULPHAS.

Sulphate of Cinchonidine.

$(C_{20}H_{24}N_2O)_2,H_2SO_4,3H_2O$.

The sulphate of an alkaloid obtained from the bark of various species of Cinchona. It may be obtained from the mother-liquors of the crystallisation of sulphate of quinine by further concentration, purified by crystallisation from alcohol and finally from hot water.

Characters and Tests.—In colourless silky crystals, usually acicular. Soluble in water, alcohol, or ether; almost insoluble in chloroform or in solution of ammonia; readily soluble in diluted acids. The solution in water has a bitter taste and a neutral or faintly alkaline reaction, twists a ray of polarised light to the left, when acidified is not distinctly fluorescent, gives a white precipitate with chloride of barium. The aqueous solution yields a white precipitate with solution of tartarated soda, and in the filtrate from this mixture solution of ammonia occasions not more than a slight turbidity. It dissolves in pure sulphuric acid with production of not more than a faint yellow coloration, and the fluid undergoes no apparent change when gently warmed. Twenty-five grains of the salt lose 1·76 grain of moisture on drying at 212° F. (100° C.) When ignited in air no ash remains.

Dose.—1 to 10 grains.

CINCHONINÆ SULPHAS.

Sulphate of Cinchonine.

$(C_{20}H_{24}N_2O)_2,H_2SO_4,2H_2O$.

The sulphate of an alkaloid obtained from the bark of various species of Cinchona and Remijia. It may be obtained from the mother-liquors of the crystallisation of the sulphates of quinine, cinchonidine, and quinidine, by precipitating the alkaloid with caustic soda, washing it with spirit until free from other alkaloids, dissolving in sulphuric acid, and, after purifying the solution with animal charcoal, allowing to crystallise.

Characters and Tests.—Hard, colourless, short, prismatic crystals, with a vitreous lustre. Soluble in water and in chloroform, almost insoluble in ether and in solution of ammonia, readily soluble in rectified spirit and in diluted acids. The aqueous solution has a bitter taste, a neutral or faintly alkaline reaction, and twists a ray of polarised light to the right; its acidified solution is not fluorescent, and gives a white precipitate with chloride of barium. It dissolves in pure sulphuric acid without change of colour, and the fluid undergoes no apparent change when gently warmed. Twenty-five grains of the salt should lose 1·26 grain of moisture when dried at 212° F. (100° C.), and should then almost wholly dissolve in four ounces by weight of chloroform. When ignited in air no ash remains.

Dose.- 1 to 10 grains.

CINNAMOMI CORTEX.

Cinnamon Bark.

The dried inner bark of shoots from the truncated stocks or stools of the cultivated cinnamon tree, Cinnamomum zeylanicum, *Breyn*; *Wight, Icon. Plant. Ind. Orient.* plate 123. Imported from Ceylon, and distinguished in commerce as Ceylon Cinnamon.

Characters and Test.—In closely rolled quills, each about three-eighths of an inch in diameter, and containing several smaller quills. It is thin, brittle, splintery, moderately pliable, dull light yellowish-brown externally, and marked by little scars or holes and faint shining wavy lines; darker brown on its inner surface. Odour fragrant; taste warm, sweet, and aromatic. A decoction when cool is not coloured by iodine.

Preparations.

Acidum Sulphuricum Aromaticum	1 ounce to 1 pint
Aqua Cinnamomi	20 ounces to 1 gallon
Decoctum Hæmatoxyli	55 grains to 1 pint
Infusum Catechu	60 grains to 1 pint
Oleum Cinnamomi	
Pulvis Catechu Compositus	1 part in 10
,, Cinnamomi Compositus	1 part in 3
,, Cretæ Aromaticus	1 part in 11
,, Kino Compositus	1 part in 5
Tinctura Cardamomi Composita	½ ounce to 1 pint
,, Catechu	1 ounce to 1 pint
,, Cinnamomi	2½ ounces to 1 pint
,, Lavandulæ Composita	75 grains to 1 pint
Vinum Opii	75 grains to 1 pint

COCA.

Coca.

Synonym.—Cuca.

The dried leaves of Erythroxylon Coca, *Lamarck*; *Bentl. and Trim. Med. Pl.* vol. i. plate 40.

Characters.—Shortly stalked, oval or lanceolate, of varying thickness, one to two inches or more in length, entire, usually blunt and emarginate, quite smooth; midrib prominent, with numerous faint freely anastomosing lateral veins, and on each side of the midrib a curved line extends from base to apex; green above, somewhat paler beneath. In commercial specimens the leaves are more or less broken, and frequently yellowish-green, yellowish-brown, or brown, and in rare cases the curved lines are indistinguishable. Odour faintly tea-like, especially when bruised; taste somewhat bitter and aromatic.

Dose.—½ to 2 drachms.

Preparations.

Extractum Cocæ Liquidum	Cocainæ Hydrochloras

COCAINÆ HYDROCHLORAS.

Hydrochlorate of Cocaine.

$C_{17}H_{21}NO_4,HCl$.

The hydrochlorate of an alkaloid obtained from the leaves of Erythroxylon Coca, *Lamarck.* It may be obtained by agitating with ether an aqueous solution of an acidulated alcoholic extract, made alkaline with carbonate of sodium; separating and evaporating the ethereal liquid, purifying the product by repeating the treatment with acidulated water, carbonate of sodium, and ether; decolorising; neutralising with hydrochloric acid, and recrystallising.

Characters and Tests.—In almost colourless acicular crystals or crystalline powder, readily soluble in water, alcohol, and ether. Its solution in water has a bitter taste; gives a yellow precipitate with chloride of gold; and a white precipitate with carbonate of ammonium, soluble in excess of the reagent. Its solution produces on the tongue a tingling sensation followed by numbness. The aqueous solution dilates the pupil of the eye. It dissolves without colour in cold concentrated acids, but chars with hot sulphuric acid. The solution yields little or no cloudiness with chloride of barium or oxalate of ammonium. Ignited in the air it burns without residue.

Dose.—$\frac{1}{8}$ to 1 grain.

Preparation.—Lamellæ Cocainæ.

COCCUS.

Cochineal.

The dried female insect, Coccus Cacti, *Linn.*, reared on Opuntia cochinillifera, *Mills*; and on other species of Opuntia.

Characters and Test.—About one-fifth of an inch long; somewhat oval in outline, flat or concave beneath, convex above, transversely wrinkled, purplish-black or purplish-grey, easily reduced to powder which is dark red or puce-coloured. When macerated in water no insoluble powder is separated. Ignited with free access of air, not much more than one per cent. of ash remains.

Preparations.

Tinctura Cardamomi Composita .	55 grains to 1 pint
,, Cinchonæ Composita .	28 grains to 1 pint
,, Cocci	$2\frac{1}{2}$ ounces to 1 pint

CODEINA.

Codeine.

Synonym.—Codeia.

$C_{18}H_{21}NO_3,H_2O$.

An alkaloid contained in opium and separated from the ammoniacal liquors from which morphine has been obtained, by evaporating, treating the residue with water, precipitating with caustic potash, and purifying the precipitated alkaloid by recrystallisation from ether.

Characters and Tests.—In colourless or nearly colourless octahedral crystals, soluble in eighty parts of water and of solution of ammonia, readily soluble in spirit and in diluted acids. The aqueous solution has a bitter taste and an alkaline reaction. The alkaloid dissolves in sulphuric acid, forming a colourless solution, which, when gently warmed with molybdate of ammonium or a trace of perchloride of iron, assumes a deep blue colour. Moistened with strong nitric acid it becomes yellow but not red. Ignited in air it yields no ash.

Dose.—¼ to 2 grains.

COLCHICI CORMUS.

Colchicum Corm.

The fresh corm of Colchicum autumnale, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iv. plate 288, collected about the end of June or beginning of July; and the same stripped of its coats, sliced transversely, and dried at a temperature not exceeding 150° F. (65°·5 C.)

Characters.—Fresh corm about one inch and a half long and an inch broad, somewhat conical, flattened on one side where it has a new corm in process of development, and rounded on the other; covered with an outer thin brown membranous coat, and an inner one reddish-yellow; internally white and solid, and when cut yielding a milky juice of a bitter taste and disagreeable odour. Dried slices one-eighth or one-tenth of an inch thick, yellowish at their circumference, moderately indented on one side and convex on the other, so that they are somewhat reniform in outline; the surfaces firm, whitish, amylaceous; breaking readily with a short fracture; taste bitter, no odour.

Dose, in powder.—2 to 8 grains.

Preparations.

Extractum Colchici
" " Aceticum
Vinum Colchici . . . 88 grains to 1 fluid ounce

COLCHICI SEMINA.

Colchicum Seeds.

The seeds of Colchicum autumnale, *Linn.*, collected when fully ripe, which is commonly about the end of July or beginning of August; and carefully dried.

Characters.—About one-tenth of an inch in diameter, subglobular, slightly pointed at the hilum, reddish-brown, somewhat rough, very hard and difficult to powder; no odour, taste bitter and acrid.

Preparation.

Tinctura Colchici Seminum .	54½ grains to 1 fluid ounce

COLLODIUM.

Collodion.

Take of

Pyroxylin . .	1 ounce	or . .	1 part
Ether . . .	36 fluid ounces .	,, . .	36 fluid parts
Rectified Spirit .	12 fluid ounces .	,, . .	12 fluid parts

Mix the ether and the spirit and add the pyroxylin. Set aside for a few days, and, should there be any sediment, decant the clear solution. Keep it in a well-corked bottle.

Characters.—A colourless highly inflammable liquid with ethereal odour, which dries rapidly upon exposure to the air, and leaves a thin transparent film, insoluble in water or rectified spirit.

Preparation.—Collodium Flexile.

COLLODIUM FLEXILE.

Flexible Collodion.

Take of

Collodion . .	12 fluid ounces . .	or . .	48 fluid parts
Canada Balsam .	½ ounce	,, . .	2 parts
Castor Oil . .	¼ ounce	,, . .	1 part

Mix, and keep in a well-corked bottle.

COLLODIUM VESICANS.

Blistering Collodion.

Take of

Blistering Liquid	20 fluid ounces	or	20 fluid parts
Pyroxylin	1 ounce	,,	1 part

Add the pyroxylin to the liquid in a stoppered bottle, and shake them together until the former is dissolved.

COLOCYNTHIDIS PULPA.

Colocynth Pulp.

The dried peeled fruit, freed from seeds, of Citrullus Colocynthis, *Schrad.*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 114.

Characters and Test.—As imported it is usually in more or less broken balls, which are whitish, about two inches or less in diameter, roundish, very light, spongy, tough, and consisting of the pulp in which the seeds are imbedded. The broken-up pulp freed from seeds is the condition in which it is usually supplied to pharmacists, and in which state only is it official. This pulp is light, spongy, whitish, without odour, but with an intensely bitter taste. The powder is not coloured blue by iodine, and does not yield oil when treated with ether and the separated ether evaporated.

Dose, in powder.—2 to 8 grains.

Preparations.

Extractum Colocynthidis Compositum	1 part to 4½, nearly
Pilula Colocynthidis Composita	1 part in 6, nearly
,, ,, et Hyoscyami	1 part in 9, nearly

CONFECTIO OPII.

Confection of Opium.

Take of

Compound Powder of Opium .	100 grains	. . or . .	1 part
Syrup	300 grains	. . ,, . .	3 parts

Mix.

Dose.—5 to 20 grains.

CONFECTIO PIPERIS.

Confection of Pepper.

Take of

Black Pepper, in fine powder .	2 ounces	. . . or . .	2 parts
Caraway Fruit, in fine powder	3 ounces	. . . ,, . .	3 parts
Clarified Honey . . .	15 ounces	. . ,, . .	15 parts

Rub them well together in a mortar.

Dose.—60 to 120 grains.

CONFECTIO ROSÆ CANINÆ.

Confection of Hips.

Take of

Hips deprived of their seed-like fruits . . .	1 pound	. . or . .	1 part
Refined Sugar . . .	2 pounds	. . ,, . .	2 parts

Beat the hips to a pulp in a stone mortar, and rub the pulp through a sieve, then add the sugar, and rub them well together.

CONFECTIO ROSÆ GALLICÆ.

Confection of Roses.

Take of

Fresh Red-Rose Petals .	1 pound	. . or . .	1 part
Refined Sugar . . .	3 pounds	. . ,, . .	3 parts

Beat the petals to a pulp in a stone mortar, add the sugar, and rub them well together.

Preparations.

Pilula Aloes Barbadensis
,, ,, et Asafœtidæ
,, ,, et Ferri
Pilula Aloes Socotrinæ
,, Ferri Carbonatis
Hydrargyri
Pilula Plumbi cum Opio

CONFECTIO SCAMMONII.

Confection of Scammony.

Take of

Resin of Scammony, in powder	6 ounces	. . . . . or . .	48 parts
Ginger, in fine powder . .	3 ounces	. . . . . ,, . .	24 parts
Oil of Caraway .	¼ fluid ounce	. . ,, . .	2 fluid parts
Oil of Cloves .	⅛ fluid ounce	. . ,, . .	1 fluid part
Syrup . . .	6 fluid ounces	. . ,, . .	48 fluid parts
Clarified Honey .	3 ounces	. . . . . ,, . .	24 parts

Rub the powders with the syrup and the honey into a uniform mass, then add the oils, and mix.

Dose.—10 to 30 grains.

CONFECTIO SENNÆ.

Confection of Senna.

Take of

Senna, in fine powder	7 ounces
Coriander Fruit, in fine powder . .	3 ounces
Figs	12 ounces
Tamarind	9 ounces
Cassia Pulp	9 ounces
Prunes	6 ounces
Extract of Liquorice	1 ounce
Refined Sugar	30 ounces
Distilled Water, a sufficiency to make .	75 ounces

Boil the figs and prunes gently with twenty-four ounces of distilled water in a covered vessel for four hours, then, having added more distilled water to make up the quantity to its original volume, mix the tamarind and cassia pulp, digest for two hours, and rub the softened pulp of the fruits through a hair sieve, rejecting the seeds and other hard parts. To the pulped product add the sugar and extract of liquorice, and dissolve them with the aid of a little heat; while the mixture is still warm, add to it gradually the mixed senna and coriander powders, and mix the whole thoroughly, making the weight of the resulting confection seventy-five ounces either by evaporation or by the addition of more distilled water.

Dose.—60 to 120 grains.

CONFECTIO SULPHURIS.

Confection of Sulphur.

Take of

Sublimed Sulphur .	4 ounces	or . .	4 parts
Acid Tartrate of Potassium, in powder .	1 ounce	,, . .	1 part
Syrup of Orange Peel .	4 fluid ounces .	,, . .	4 fluid parts
Tragacanth, in powder.	18 grains	,, . .	$\frac{1}{24}$ part

Rub them well together.

Dose.—60 to 120 grains.

CONFECTIO TEREBINTHINÆ.

Confection of Turpentine.

Take of

Oil of Turpentine .	1 fluid ounce . .	or . .	1 fluid part
Liquorice Root, in powder . .	1 ounce	,, . .	1 part
Clarified Honey .	2 ounces	,, . .	2 parts

Rub the oil of turpentine with the liquorice, add the oney, and mix to a uniform consistence.

Dose.—60 to 120 grains.

CONII FOLIA.

Hemlock Leaves.

The fresh leaves and young branches of Conium maculatum, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 118; gathered from wild British plants when the fruit begins to form.

Characters and Test.—More or less divided in a pinnate manner, the lower leaves decompound and sometimes two feet in length, glabrous, and arising from a smooth stem, which is marked with dark purple spots, by clasping petioles of varying lengths, those of the lower leaves being hollow. Odour strong and very disagreeable, more especially when rubbed with solution of potash.

Dose, in powder.—2 to 8 grains.

Preparations.

Extractum Conii	Succus Conii

CONII FRUCTUS.

Hemlock Fruit.

The fruit of Conium maculatum, *Linn.*, gathered when fully developed, but while still green, and carefully dried.

Characters and Test.—About one-eighth of an inch long, broadly ovoid, somewhat compressed laterally, and crowned by the depressed stylopod, dull greenish-grey. As met with in commerce, it consists usually of the separated mericarps, each of which presents five prominent more or less crenated ridges, with the furrows smooth, and without evident vittæ. Reduced to powder and rubbed with solution of potash, it gives out a very strong and disagreeable odour.

Preparation.—Tinctura Conii, 54½ grains to 1 fluid ounce.

COPAIBA.

Copaiva or Copaiba.

The oleo-resin obtained by cutting deeply or boring nto the trunk of Copaifera Langsdorffii, *Desf.*; *Bentl. nd Trim. Med. Pl.* vol. ii. plate 93; and other species of opaifera, *Linn.*

Characters and Tests.—A more or less viscid liquid; enerally transparent and not fluorescent, but some varieties re opalescent and occasionally slightly fluorescent; light ellow to pale golden brown, having a peculiar aromatic odour, nd a persistent acrid somewhat bitter taste. Its specific gravity aries from 0·940 to about 0·993. A small quantity heated ntil all volatile oil is removed yields a residue which when old is hard, and, generally, easily rubbed to powder; and the il volatilised during the operation does not smell of turpentine. lmost entirely soluble in absolute alcohol, and in four times s bulk of petroleum spirit, the latter solution only yielding a lmy deposit on standing.

Dose.—½ to 1 fluid drachm.

Preparation.—Oleum Copaibæ.

CORIANDRI FRUCTUS.

Coriander Fruit.

The dried ripe fruit of Coriandrum sativum, *Linn.*; *entl. and Trim. Med. Pl.* vol. ii. plate 133.

Characters.—Nearly globular, and consisting of two closely nited hemispherical mericarps, crowned by the calyx teeth and ylopod, about one-fifth of an inch in diameter, brownish-ellow, hard, faintly ribbed with both primary and secondary dges, the two mericarps enclosing a lenticular cavity, and ach furnished on its commissural surface with two brown vittæ. It has an agreeable mild aromatic taste, and when bruised a pleasant odour.

Preparations.

Confectio Sennæ . . .	1 part in 25
Oleum Coriandri	
Syrupus Rhei	
Tinctura Rhei	¼ ounce to 1 pint
,, Sennæ . . .	½ ounce to 1 pint

CREASOTUM.

Creasote.

A product of the distillation of wood tar.

Characters and Tests.—A liquid, colourless, or with a yellowish tinge, and a strong empyreumatic odour. It is sparingly dissolved by water, but freely by alcohol, ether, and glacial acetic acid. Specific gravity 1·071. It does not coagulate albumen. Dropped on white filtering paper and exposed to a temperature of 212° F. (100° C.), it leaves no translucent stain. It turns the plane of polarisation of a ray of polarised light to the right. It is not solidified by the cold produced by a mixture of hydrochloric acid and sulphate of sodium. It is miscible with collodion without production of any precipitate. An aqueous solution (one per cent.) with a drop of a dilute neutral solution of ferric chloride yields a green coloration, rapidly changing to a reddish-brown, and, unless the mixture is very dilute, giving a reddish-brown precipitate.

Dose.—1 to 3 drops.

Preparations.

Mistura Creasoti . .	1 minim in 1 fluid ounce
Unguentum Creasoti . .	1 part in 9
Vapor Creasoti	

CRETA.

Chalk.

Native friable carbonate of calcium.

Preparation.—Creta Præparata.

Used in producing carbonic acid gas.

CRETA PRÆPARATA.

Prepared Chalk.

Chalk, freed from most of its impurities by elutriation, and afterwards dried in small masses, which are usually of a conical form.

Characters and Tests.—A white amorphous substance, effervescing with acids, and dissolving, with only a slight residue, in diluted hydrochloric acid. This solution, when supersaturated with solution of ammonia, gives, upon the addition of oxalate of ammonium, a copious white precipitate. The salt formed by dissolving the prepared chalk in hydrochloric acid, if rendered neutral by evaporation to dryness and then redissolved in water, gives only a very scanty precipitate on the addition of saccharated solution of lime.

Dose.—10 to 60 grains.

Preparations.

Hydrargyrum cum Creta . . .	2 parts in 3
Mistura Cretæ	1 part in 32
Pulvis Cretæ Aromaticus . . .	1 part in 4
,, ,, ,, cum Opio . .	1 part in 4, nearly

CROCUS.

Saffron.

The dried stigmas and top of the style of Crocus sativus, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iv. plate 274.

Characters and Tests.—Each entire portion of commercial saffron is an inch or somewhat more in length; it consists of three thread-like orange-red stigmas, thickened and tubular above, and jagged or notched at their extremities, and united below to the top of the yellow style. It is flexible, unctuous to the touch, with a peculiar strong aromatic odour, and a bitter somewhat aromatic taste. Rubbed on the wet finger it leaves an intense orange-yellow tint. When pressed between folds of white filtering paper, it leaves no oily stain. When a small portion is placed in a glass of warm water it colours the liquid orange-yellow, but should not deposit any white or coloured powder. Ignited with free access of air, it yields about six per cent. of ash.

Preparations.

Decoctum Aloes Compositum .	2·2 grains to 1 fluid ounce
Pilula Aloes et Myrrhæ . .	1 part in 12
Pulvis Cretæ Aromaticus . .	1 part in 15, nearly
Tinctura Cinchonæ Composita .	55 grains to 1 pint
,, Croci	1 ounce to 1 pint
,, Opii Ammoniata . .	180 grains to 1 pint
,, Rhei	¼ ounce to 1 pint

CUBEBA.

Cubebs.

The dried unripe full-grown fruit of Piper Cubeba, *Linn. fil.* (Cubeba officinalis, *Miquel*); *Bentl. and Trim. Med. Pl.* vol. iv. plate 243.

Characters and Test.—Globular, about one-sixth of an inch in diameter, blackish- or greyish-brown, much wrinkled, and tapering below into a rounded stalk which is continuous with, and permanently attached to, the pericarp. Beneath the shrivelled skin is a hard brown smooth shell in which the seed is contained in the mature fruit, but in commercial cubebs this seed is mostly so little developed that the pericarp is nearly empty. Taste warm, aromatic, and somewhat bitter;

odour strong, peculiar, and aromatic. A decoction when cold is coloured bright indigo-blue by solution of iodine.

Dose, in powder.—30 to 120 grains.

Preparations.

Oleo-resina Cubebæ
Oleum Cubebæ
Tinctura Cubebæ . . . 2½ ounces to 1 pint

CUPRI NITRAS.

Nitrate of Copper.

Synonym.—Cupric Nitrate.

$Cu(NO_3)_2,3H_2O$.

May be obtained by dissolving copper in diluted nitric acid and evaporating the solution until crystallisation takes place on cooling to a temperature not lower than 70° F. (21°·1 C.)

Characters and Tests.—Deep blue prismatic crystals, very deliquescent, highly corrosive. With one-third of its weight of water it forms, at a temperature below 70° F. (21°·1 C.) tabular crystals, $Cu(NO_3)_2,6H_2O$. With a very little more water, added directly or absorbed from the air, it yields a styptic, caustic, corrosive fluid. The diluted aqueous solution is only faintly acid to litmus; gives a maroon-red precipitate with ferrocyanide of potassium; affords a violet-blue solution with excess of ammonia; and on the addition of two or three crystals of sulphate of iron and a few drops of sulphuric acid yields a black zone round the crystals.

CUPRI SULPHAS.

Sulphate of Copper.

$CuSO_4,5H_2O$.

May be obtained by heating sulphuric acid and copper together, dissolving the soluble product in hot water, and evaporating the solution until crystallisation takes place on cooling; or by dissolving black oxide of copper in hot diluted sulphuric acid, filtering, evaporating, and crystallising.

Characters and Tests.—A blue crystalline salt, in oblique prisms, soluble in water, forming a pale blue solution which strongly reddens litmus. The aqueous solution gives with chloride of barium a white precipitate insoluble in hydrochloric acid, and a maroon-red precipitate with ferrocyanide of potassium. If an aqueous solution of the salt be mixed with twice its volume of solution of chlorine, and solution of ammonia be added, the precipitate formed by the first addition of the ammonia will be dissolved by a further and sufficient addition of the alkali, and a violet-blue solution will be produced, leaving little or nothing undissolved.

Dose.—As an astringent, ¼ to 2 grains; as an emetic, 5 to 10 grains.

CUPRUM.

Copper.

Fine copper wire, about No. 25 wire gauge, or about 0·02 inch.

Preparations containing Copper.

Cupri Nitras | Cupri Sulphas

Preparation for which Copper is used.

Spiritus Ætheris Nitrosi

CUSPARIÆ CORTEX.

Cusparia Bark.

The dried bark of Galipea Cusparia, *St. Hilaire*; *Bentl. and Trim. Med. Pl.* vol. i. plate 43.

Characters and Test.—In flattish or curved pieces, or in quills, six inches or less in length; the bark itself commonly not more than one-sixth of an inch thick, and obliquely cut on its inner edge. Coated externally with a yellowish-grey mottled corky layer, which may usually be scraped off by the nail, the exposed surface then presenting a dark brown resinous appearance; inner surface light brown, flaky, and occasionally with strips of the wood attached; fracture short and resinous, and exhibiting, more especially when examined by a magnifying lens, numerous white points or lines. Taste bitter and somewhat aromatic; odour musty and disagreeable. The fractured surface touched with nitric acid does not become of an arterial blood-red colour.

Preparation.

Infusum Cuspariæ . . . 1 ounce to 1 pint

CUSSO.

Kousso.

The dried panicles (chiefly of the female flowers) of Hagenia abyssinica, *Willd.* (Brayera anthelmintica, *Kunth*); *Bentl. and Trim. Med. Pl.* vol. ii. plate 102.

Characters.—In compressed clusters or more or less cylindrical rolls, usually ten inches or more in length, or the panicles are broken up into small fragments; brownish or greenish-brown, or reddish in the case of the female flowers; odour herby, tea-like; taste bitter, acrid, and disagreeable. The separate panicles are much branched, zigzag, more or less covered with hairs and glands, and with a large sheathing bract at the base of every branch. Flowers numerous, small, shortly stalked, unisexual, with two roundish membranous veiny bracts at the base of each flower, which are brownish-yellow in the male, and tinged with red in the female flowers; calyx hairy externally, veiny, with ten segments in two alternating whorls.

Dose.—$\frac{1}{4}$ to $\frac{1}{2}$ ounce.

Preparation.

Infusum Cusso . . $\frac{1}{4}$ ounce to 4 fluid ounces

DECOCTUM ALOES COMPOSITUM.

Compound Decoction of Aloes.

Take of

Extract of Socotrine Aloes	½ ounce
Myrrh	of each ¼ ounce
Saffron	
Carbonate of Potassium	
Extract of Liquorice	2 ounces
Compound Tincture of Cardamoms	15 fluid ounces
Distilled Water	a sufficiency to make 50 fluid ounces

Reduce the extract of aloes and the myrrh to coarse powder, and put them together with the carbonate of potassium and extract of liquorice into a suitable covered vessel with a pint of distilled water; boil gently for five minutes, then add the saffron. Let the vessel with its contents cool, then add the tincture of cardamoms, and, covering the vessel closely, allow the ingredients to macerate for two hours; finally, strain through flannel, pouring as much distilled water over the contents of the strainer as will make the strained product measure fifty fluid ounces.

This preparation should be kept in vessels from which air is excluded as far as possible.

Dose.—½ to 2 fluid ounces.

DECOCTUM CETRARIÆ.

Decoction of Iceland Moss.

Take of

Iceland Moss	1 ounce
Distilled Water	1 pint

Wash the moss in cold water, to remove impurities; boil it with the distilled water for ten minutes in a covered vessel, and strain, with gentle pressure, while hot; then pour distilled water over the contents of the strainer until the strained product measures a pint.

Dose.—1 to 4 fluid ounces.

DECOCTUM

Decoction of Cinchona.

Take of

Red Cinchona Bark, in No. 20 powder .	1¼ ounce
Distilled Water	1 pint

Boil for ten minutes in a covered vessel. Strain the decoction, when cold, and pour as much distilled water over the contents of the strainer as will make the strained product measure one pint.

Dose.—1 to 2 fluid ounces.

DECOCTUM GRANATI RADICIS.

Decoction of Pomegranate Root.

Take of

Pomegranate Root Bark, sliced . .	2 ounces
Distilled Water	2 pints

Boil down to a pint, and strain, making the strained product up to a pint, if necessary, by pouring distilled water over the contents of the strainer.

Dose.—2 to 4 fluid ounces.

DECOCTUM HÆMATOXYLI.

Decoction of Logwood.

Take of

Logwood, in chips	1 ounce
Cinnamon Bark, bruised	55 grains
Distilled Water	1 pint

Boil the logwood in the water for ten minutes in a covered vessel, adding the cinnamon towards the end. Strain the decoction, and pour as much distilled water over the contents of the strainer as will make the strained product measure a pint.

Dose.—1 to 2 fluid ounces.

DECOCTUM HORDEI.

Decoction of Barley.

Take of

Pearl Barley	2 ounces
Distilled Water	1½ pint

Wash the barley in cold water, and reject the washings; boil the washed barley with the distilled water for twenty minutes in a covered vessel, and strain. Product, about one pint.

Dose.—1 to 4 fluid ounces.

DECOCTUM PAPAVERIS.

Decoction of Poppy.

Take of

Poppy Capsules, bruised	2 ounces
Distilled Water	1½ pint

Boil for ten minutes in a covered vessel, then strain, and pour as much distilled water over the contents of the strainer as will make the strained product measure a pint.

DECOCTUM PAREIRÆ.

Decoction of Pareira.

Take of

Pareira Root, in No. 20 powder	1¼ ounce
Distilled Water	1 pint

Boil for fifteen minutes in a covered vessel, then strain, and pour as much distilled water over the contents of the strainer as will make the strained product measure a pint.

Dose.—1 to 2 fluid ounces.

DECOCTUM QUERCÛS.

Decoction of Oak Bark.

Take of

Oak Bark, bruised	1¼ ounce
Distilled Water	1 pint

Boil for ten minutes in a covered vessel, then strain, and pour as much distilled water over the contents of the strainer as will make the strained product measure a pint.

DECOCTUM SARSÆ.

Decoction of Sarsaparilla.

Take of

Jamaica Sarsaparilla, cut transversely	2½ ounces
Boiling Distilled Water	1½ pint

Digest the sarsaparilla in the water for an hour, then boil for ten minutes in a covered vessel, cool and strain, pouring distilled water, if required, over the contents of the strainer, or otherwise making the strained product measure a pint.

Dose.—2 to 10 fluid ounces.

DECOCTUM SARSÆ COMPOSITUM.

Compound Decoction of Sarsaparilla.

Take of

Jamaica Sarsaparilla, cut transversely		2½ ounces
Sassafras Root, in chips	of each	¼ ounce
Guaiacum Wood turnings		
Dried Liquorice Root, bruised		
Mezereon Bark		⅛ ounce
Boiling Distilled Water		1½ pint

Digest the solid ingredients in the water for an hour, then boil for ten minutes in a covered vessel; cool and strain, pouring distilled water, if required, over the contents of the strainer, or otherwise making the strained product measure a pint.

Dose.—2 to 10 fluid ounces.

DECOCTUM SCOPARII.

Decoction of Broom.

Take of

Broom Tops, dried	1 ounce
Distilled Water	1 pint

Boil for ten minutes in a covered vessel, then strain, and pour as much distilled water over the contents of the strainer as will make the strained product measure a pint.

Dose.—2 to 4 fluid ounces.

DECOCTUM TARAXACI.

Decoction of Dandelion.

Take of

Dried Dandelion Root, sliced and bruised .	1 ounce
Distilled Water	1 pint

Boil for ten minutes in a covered vessel, then strain, and pour as much distilled water over the contents of the strainer as will make the strained product measure a pint.

Dose.—2 to 4 fluid ounces.

DIGITALIS FOLIA.

Foxglove Leaves.

The leaves of Digitalis purpurea, *Linn.*; *Woodv. Med. Bot.* plate 24. Collected from wild British plants of the second year's growth when about two-thirds of the flowers are expanded, and carefully dried.

Characters.—From four to twelve or more inches in length, and sometimes as much as five or six inches broad, with a winged petiole of varying length; ovate or ovate-lanceolate, subacute, crenate or irregularly crenate-dentate, somewhat rugose, slightly hairy and dull-green above, densely pubescent and paler beneath. Taste very bitter, unpleasant; odour faint, agreeable, and tea-like.

Dose, in powder.—½ to 1½ grain.

Preparations.

Infusum Digitalis . .	3 grains to 1 fluid ounce, nearly
Tinctura Digitalis . .	54½ grains to 1 fluid ounce

ECBALLII FRUCTUS.

Squirting Cucumber Fruit.

Synonym.—Elaterii Fructus.

The fruit, very nearly ripe, of Ecballium Elaterium, *A. Richard.*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 115. From plants cultivated in Britain.

Preparation.—Elaterium.

ELATERINUM.

Elaterin.

The active principle of elaterium. It may be obtained by exhausting elaterium with chloroform, adding ether to the chloroformic solution, collecting the precipitate, washing the latter with ether, and purifying by recrystallisation from chloroform.

Characters and Tests.—A chemically neutral substance. In small colourless crystals; insoluble in water, sparingly soluble in rectified spirit. It has a bitter taste. Heated with access of air, it first melts and then burns, leaving no residue. With melted carbolic acid it yields a solution which, on the addition of sulphuric acid, acquires a crimson colour rapidly changing to scarlet. It is not precipitated from solution by tannic acid, nor by the salts of mercury or of platinum.

Dose.—$\frac{1}{40}$ to $\frac{1}{10}$ grain.

Preparation.—Pulvis Elaterini Compositus.

ELATERIUM.

Elaterium.

Synonym.—Extractum Elaterii.

A sediment from the juice of the Squirting Cucumber fruit.

Take of

Squirting Cucumber Fruit, very nearly ripe .	1 pound

Cut the fruit lengthwise, and lightly press out the juice. Strain it through a hair-sieve, and set it aside to deposit. Carefully pour off the supernatant liquid; pour the sediment on a linen filter; and dry it on porous tiles in a warm place. The decanted fluid may deposit a second portion of sediment, which can be dried in the same way.

Characters and Tests.—In light friable flat or slightly curved opaque cakes, about one-tenth of an inch thick; pale green, greyish-green, or yellowish-grey, according to age; fracture finely granular; odour faint, tea-like, taste bitter and acrid. Does not effervesce with acids; boiled with water and the cooled mixture treated with iodine, affords little or no blue colour; yields half its weight to boiling rectified spirit. Treated by the method described for 'Elaterin,' it should yield twenty-five per cent., or not less than twenty per cent., of that substance.

Dose.—$\frac{1}{16}$ to $\frac{1}{2}$ grain.

Preparation.—Elaterinum.

ELEMI.

Manila Elemi.

A concrete resinous exudation, the botanical source of which is undetermined but is sometimes referred to Canarium commune, *Linn.*; *Rumph. Amb.* vol. ii. plate 47.

Characters.—When fresh, soft, granular, resinous, and colourless, but by keeping it becomes harder, and of a pale yellow tint. Odour strong and fragrant, somewhat resembling fennel and lemon. Moistened with rectified spirit, it breaks up into small particles, which, when examined by the microscope, are seen partly to consist of acicular crystals.

Preparation.

Unguentum Elemi	1 part in 5

EMPLASTRUM AMMONIACI CUM HYDRARGYRO.

Ammoniacum and Mercury Plaster.

Take of

Ammoniacum . .	12 ounces	or	656 parts
Mercury . . .	3 ounces	,,	164 parts
Olive Oil . . .	56 grains	,,	7 parts
Sublimed Sulphur .	8 grains	,,	1 part

Heat the oil, and add the sulphur to it gradually, stirring till they unite. With this mixture triturate the mercury, until globules are no longer visible; and, lastly, add the ammoniacum, previously liquefied, mixing the whole carefully.

EMPLASTRUM BELLADONNÆ.

Belladonna Plaster.

Take of

Alcoholic Extract of Belladonna	4 ounces	or	1 part
Resin Plaster Soap Plaster } of each . .	8 ounces	,,	2 parts

Melt the plasters by the heat of a water-bath, then add the extract, and mix the whole thoroughly together.

EMPLASTRUM CALEFACIENS.

Warming Plaster.

Synonym.—Warm Plaster.

Take of

Cantharides, in coarse powder Expressed Oil of Nutmeg Yellow Wax Resin	of each 4 ounces	. . . or . . 1 part
Resin Plaster	3¼ pounds	. . ,, . . 13 parts
Soap Plaster	2 pounds	. . . ,, . . 8 parts
Boiling Water	1 pint	. . . . . ,, . . 5 fluid parts

Infuse the cantharides in the boiling water for six hours; squeeze strongly through calico, and evaporate the expressed liquid by a water-bath till reduced to one third. Then add the other ingredients, and melt in a water-bath, stirring well until the whole is thoroughly mixed.

EMPLASTRUM CANTHARIDIS.

Cantharides Plaster.

Take of

Cantharides, in powder	12 ounces	. . or . . 4 parts
Yellow Wax Prepared Suet } of each	7½ ounces	. . ,, . . 2½ parts
Prepared Lard	6 ounces	. . . ,, . . 2 parts
Resin	3 ounces	. . . ,, . . 1 part

Liquefy the wax, suet, and lard together by a water-bath, and add the resin, previously melted; then introduce the cantharides, mix the whole thoroughly, and continue to stir the mixture while it is allowed to cool.

EMPLASTRUM FERRI.

Chalybeate Plaster.

Take of

Peroxide of Iron, in fine powder	1 ounce	or	1 part
Burgundy Pitch	2 ounces	,,	2 parts
Lead Plaster	8 ounces	,,	8 parts

Add the peroxide of iron to the Burgundy pitch and lead plaster, previously melted together, and stir the mixture constantly till it stiffens on cooling.

EMPLASTRUM GALBANI.

Galbanum Plaster.

Take of

Galbanum Ammoniacum Yellow Wax	of each	1 ounce	or	1 part
Lead Plaster		8 ounces	,,	8 parts

Melt the galbanum and ammoniacum together, and strain; then add the mixture to the lead plaster and wax, also previously melted together, and mix the whole thoroughly.

EMPLASTRUM HYDRARGYRI.

Mercurial Plaster.

Take of

Mercury	3 ounces	or	164 parts
Olive Oil	56 grains	,,	7 parts
Sublimed Sulphur	8 grains	,,	1 part
Lead Plaster	6 ounces	,,	328 parts

Heat the oil and add the sulphur to it gradually, stirring until they unite; with this mixture triturate the mercury until globules are no longer visible, then add the lead plaster, previously liquefied, and mix the whole thoroughly.

EMPLASTRUM OPII.

Opium Plaster.

Take of

Opium, in the finest powder .	1 ounce	.. or ..	1 part
Resin Plaster . . .	9 ounces	.. ,, ..	9 parts

Melt the resin plaster by means of a water-bath; then add the opium by degrees, and mix thoroughly.

EMPLASTRUM PICIS.

Pitch Plaster.

Take of

Burgundy Pitch . .	26 ounces	... or ..	26 parts
Common Frankincense .	13 ounces	... ,, ..	13 parts
Resin . Yellow Wax } of each .	4½ ounces	... ,, ..	4½ parts
Expressed Oil of Nutmeg	1 ounce	.... ,, ..	1 part
Olive Oil . Water . } of each .	2 fluid ounces	. ,, ..	2 fluid parts

Add the oils and the water to the frankincense, Burgundy pitch, resin, and wax, previously melted together; then, constantly stirring, evaporate to a proper consistence.

EMPLASTRUM PLUMBI.

Lead Plaster.

Take of

Oxide of Lead, in fine powder . . .	5 pounds	.. or ..	5 parts
Olive Oil . . .	10 pounds	.. ,, ..	10 parts
Water	5 pounds	.. ,, ..	5 parts

Boil all the ingredients together gently by the heat of a steam-bath, and keep them simmering for four or five hours, stirring constantly until the product acquires a proper consistence for a plaster, and adding more water during the process if necessary.

Preparations.

Emplastrum Ferri
Galbani
Hydrargyri
Emplastrum Plumbi Iodidi
,, Resinæ
,, Saponis

EMPLASTRUM PLUMBI IODIDI.

Iodide of Lead Plaster.

Take of

Iodide of Lead . .	2 ounces	. . or . .	1 part
Lead Plaster . . .	1 pound	. . ,, . .	8 parts
Resin	2 ounces	. . ,, . .	1 part

Add the iodide of lead in fine powder to the plaster and resin previously melted at as low a temperature as possible, and mix them intimately.

EMPLASTRUM RESINÆ.

Resin Plaster.

Synonym.—Adhesive Plaster.

Take of

Resin	4 ounces	. . or . .	2 parts
Lead Plaster . .	2 pounds	. . ,, . .	16 parts
Curd Soap . . .	2 ounces	. . ,, . .	1 part

To the lead plaster, previously melted at a low temperature, add the resin and soap, first liquefied, and stir them until they are thoroughly mixed.

Preparations.

Emplastrum Belladonnæ | Emplastrum Calefaciens
Emplastrum Opii

EMPLASTRUM SAPONIS.

Soap Plaster.

Take of

Curd Soap . .	6 ounces	. . . or . .	6 parts
Lead Plaster . .	2¼ pounds	. . ,, . .	36 parts
Resin . . .	1 ounce	. . . . ,, . .	1 part

To the lead plaster, melted at a low temperature, add the soap and the resin, first liquefied; then, constantly stirring, evaporate to a proper consistence.

Preparation.—Emplastrum Calefaciens.

EMPLASTRUM SAPONIS FUSCUM.

Brown Soap Plaster.

Synonym.—Emplastrum Cerati Saponis.

Take of

Curd Soap, in powder	10 ounces	or	10 parts
Yellow Wax	12½ ounces	,,	12½ parts
Olive Oil	1 pint	,,	20 fluid parts
Oxide of Lead	15 ounces	,,	15 parts
Vinegar	1 gallon	,,	160 fluid parts

Boil the vinegar and oxide of lead together, by the heat of a steam-bath, constantly stirring them until the oxide has combined with the acid; then add the soap and boil again until most of the moisture is evaporated; finally, add the wax and oil melted together, and stir the whole continuously, maintaining the heat until by the evaporation of the remaining moisture the product has acquired the proper consistence for a plaster.

ENEMA ALOES.

Enema of Aloes.

Take of

Aloes	40 grains
Carbonate of Potassium	15 grains
Mucilage of Starch	10 fluid ounces

Mix, and rub together.

ENEMA ASAFŒTIDÆ.

Enema of Asafœtida.

Take of

Asafœtida	30 grains
Distilled Water	4 fluid ounces

Rub the asafœtida in a mortar with the water added gradually, so as to form an emulsion.

ENEMA MAGNESII SULPHATIS.

Enema of Sulphate of Magnesium.

Take of

Sulphate of Magnesium	1 ounce
Olive Oil	1 fluid ounce
Mucilage of Starch	15 fluid ounces

Dissolve the sulphate of magnesium in the mucilage of starch, add the oil, and mix.

ENEMA OPII.

Enema of Opium.

Take of

Tincture of Opium	½ fluid drachm
Mucilage of Starch	2 fluid ounces

Mix.

ENEMA TEREBINTHINÆ.

Enema of Turpentine.

Take of

Oil of Turpentine	1 fluid ounce
Mucilage of Starch	15 fluid ounces

Mix.

ERGOTA.

Ergot.

The sclerotium of Claviceps purpurea, *Tulasne*, produced between the paleæ, and replacing the grain of Secale cereale, *Linn.*; *Tulasne, Ann. Sci. Nat.* vol. xx. ser. 3 (1853), plates 1–3.

Characters.—Subcylindrical or obscurely triangular, tapering towards the ends, generally arched or curved; from one-third of an inch to an inch and a half in length; longitudinally furrowed on each side, but more especially on that which is concave, and often irregularly cracked; violet-purple externally, whitish or pinkish-white within; fracture short. Odour peculiar and disagreeable, more especially if the powder be triturated with solution of potash; taste mawkish and rancid.

Dose.—20 to 30 grains.

Preparations.

Extractum Ergotæ Liquidum .	1 ounce to 1 fluid ounce
Infusum Ergotæ . . .	11 grains to 1 fluid ounce
Tinctura Ergotæ . . .	109 grains to 1 fluid ounce

ERGOTINUM.

Ergotin.

Purified extract of Ergot, commonly called Ergotin, Ergotine, or Bonjean's Ergotine.

Take of
Liquid Extract of Ergot } of each . 4 fluid ounces
Rectified Spirit . . }

Evaporate the fluid extract by a water-bath to a syrupy consistence, and when cold mix with the spirit. Let it stand for half an hour, then filter, and evaporate the filtered liquid to the consistence of a soft extract.

Dose.—2 to 5 grains.

Preparation.—Injectio Ergotini Hypodermica.

ESSENTIA ANISI.

Essence of Anise.

Take of

Oil of Anise	1 fluid ounce	or	1 fluid part
Rectified Spirit	4 fluid ounces	,,	4 fluid parts

Mix.

Dose.—10 to 20 minims.

ESSENTIA MENTHÆ PIPERITÆ.

Essence of Peppermint.

Take of

Oil of Peppermint	1 fluid ounce	or	1 fluid part
Rectified Spirit	4 fluid ounces	,,	4 fluid parts

Mix.

Dose.—10 to 20 minims.

EXTRACTUM ACONITI.

Extract of Aconite.

Take of

The fresh leaves and flowering tops of Aconite	112 pounds

Bruise in a stone mortar, and press out the juice; heat it gradually to 130° F. (54°·4 C.), and separate the green colouring matter by a calico filter. Heat the strained liquor to

200° F. (98°·3 C.) to coagulate the albumen, and again filter. Evaporate the filtrate by a water-bath to the consistence of a thin syrup; then add to it the green colouring matter previously separated and passed through a hair sieve, and, stirring the whole together assiduously, continue the evaporation at a temperature not exceeding 140° F. (60° C.), until the extract is of a suitable consistence for forming pills.

Dose.—¼ to 1 grain.

EXTRACTUM ALOES BARBADENSIS.

Extract of Barbadoes Aloes.

Take of

Barbadoes Aloes, in small fragments .	1 pound
Boiling Distilled Water	1 gallon

Add the aloes to the water, and stir well until they are thoroughly mixed. Set aside for twelve hours; then pour off the clear liquid, strain the remainder, and evaporate the mixed liquors by a current of warm air to dryness.

Dose.—2 to 6 grains.

EXTRACTUM ALOES SOCOTRINÆ.

Extract of Socotrine Aloes.

Take of

Socotrine Aloes, in small fragments .	1 pound
Boiling Distilled Water	1 gallon

Add the aloes to the water, and stir well until they are thoroughly mixed. Set aside for twelve hours; then pour off the clear liquid, strain the remainder, and evaporate the mixed liquors by a current of warm air to dryness.

Dose.—2 to 6 grains.

Preparations.

Decoctum Aloes Compositum	4·3 grains in 1 fluid ounce
Extractum Colocynthidis Compositum	1 part in 2¼, nearly

EXTRACTUM ANTHEMIDIS.

Extract of Chamomile.

Take of

Chamomile Flowers	1 pound
Oil of Chamomile	15 minims
Distilled Water	1 gallon

Boil the chamomile flowers with the water until the volume is reduced to one half, then strain, press, and filter. Evaporate the liquor by a water-bath, until the extract is of a suitable consistence for forming pills, adding the oil of chamomile at the end of the process.

Dose.—2 to 10 grains.

EXTRACTUM BELÆ LIQUIDUM.

Liquid Extract of Bael.

Take of

Bael Fruit	1 pound
Distilled Water	12 pints
Rectified Spirit	3 fluid ounces

Macerate the bael for twelve hours in one-third of the water; pour off the clear liquor; repeat the maceration a second and third time for one hour in the remaining two-thirds of the water; press the marc; and filter the mixed liquors through flannel. Evaporate to fourteen fluid ounces, and, when cold, add the rectified spirit.

Dose.—1 to 2 fluid drachms.

EXTRACTUM BELLADONNÆ.

Extract of Belladonna.

Take of

The fresh leaves and young branches of Belladonna	112 pounds

Bruise in a stone mortar, and press out the juice; heat it gradually to 130° F. (54°·4 C.), and separate the green colouring matter by a calico filter. Heat the strained liquor to 200° F. (93°·3 C.) to coagulate the albumen, and again filter. Evaporate the filtrate by a water-bath to the consistence of a thin syrup; then add to it the green colouring matter previously separated and passed through a hair sieve, and, stirring the whole together assiduously, continue the evaporation at a temperature not exceeding 140° F. (60° C.), until the extract is of a suitable consistence for forming pills.

Dose.—$\frac{1}{4}$ to 1 grain.

EXTRACTUM BELLADONNÆ ALCOHOLICUM.

Alcoholic Extract of Belladonna.

Take of

Belladonna Root, in No. 20 powder .	1 pound
Rectified Spirit Distilled Water } of each	a sufficiency

Mix the belladonna with two pints of the spirit, and macerate in a closed vessel for forty-eight hours; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with water until two pints of liquid have been collected. Evaporate the percolated liquid by a water-bath until the extract has acquired a suitable consistence.

Dose.—$\frac{1}{16}$ to $\frac{1}{4}$ grain.

Preparations.

Emplastrum Belladonnæ | Unguentum Belladonnæ

EXTRACTUM CALUMBÆ.

Extract of Calumba.

Take of

Calumba Root, cut small	1 pound
Proof Spirit	4 pints

Macerate the calumba with two pints of the proof spirit for twelve hours, strain and press. Macerate again with the same quantity of proof spirit, strain and press as before. Mix and filter the liquors, recover the spirit by distillation, and evaporate the residue by the heat of a water-bath until the extract is of a suitable consistence for forming pills.

Dose.—2 to 10 grains.

EXTRACTUM CANNABIS INDICÆ.

Extract of Indian Hemp.

Take of

Indian Hemp, in coarse powder	1 pound
Rectified Spirit	4 pints

Macerate the hemp in the spirit for seven days, and press out the tincture. Distil off the greater part of the spirit, and evaporate what remains by a water-bath to the consistence of a soft extract.

Dose.—¼ to 1 grain.

Preparation.—Tinctura Cannabis Indicæ, 1 ounce to 1 pint.

EXTRACTUM CASCARÆ SAGRADÆ.

Extract of Cascara Sagrada.

Synonym.—Extractum Rhamni Purshiani.

Take of

Cascara Sagrada, in No. 40 powder	1 pound
Proof Spirit Distilled Water } of each	a sufficiency

Mix the cascara with two pints of the spirit, and macerate in a closed vessel for forty-eight hours; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with water until three pints of liquid have been collected, or the cascara is exhausted. Evaporate the percolated liquid by a water-bath until the extract has acquired a suitable consistence.

Dose.—2 to 8 grains.

EXTRACTUM CASCARÆ SAGRADÆ LIQUIDUM.

Liquid Extract of Cascara Sagrada.

Synonym.—Extractum Rhamni Purshiani Liquidum.

Take of

Cascara Sagrada, in coarse powder .	1 pound
Rectified Spirit	4 fluid ounces
Distilled Water	a sufficiency

Boil the bark in three or four successive quantities of the water until exhausted. Evaporate the strained liquors by a water-bath, to twelve fluid ounces; when cold add the spirit, allow the mixture to remain for some hours, then filter, and make up to the volume of sixteen fluid ounces with distilled water.

Dose.—$\frac{1}{2}$ to 2 fluid drachms.

EXTRACTUM CIMICIFUGÆ LIQUIDUM.

Liquid Extract of Cimicifuga.

Take of

Cimicifuga, in No. 60 powder . .	20 ounces
Rectified Spirit	a sufficiency

Mix the cimicifuga with two pints of the spirit, and macerate in a closed vessel for forty-eight hours; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with more spirit, until the cimicifuga is exhausted. Reserve the first fifteen fluid ounces of the percolate, and evaporate the remainder by a water-bath to the consistence of a soft extract; dissolve this in the reserved portion, and make up the volume to twenty fluid ounces by the addition of more spirit.

Dose.—3 to 30 minims.

EXTRACTUM CINCHONÆ LIQUIDUM.

Liquid Extract of Cinchona.

Take of

Red Cinchona Bark, in No. 60 powder	20 ounces
Hydrochloric Acid	5 fluid drachms
Glycerine	2½ fluid ounces
Rectified Spirit Distilled Water } of each	a sufficiency

Mix the bark with five pints of the water to which the acid and glycerine have been added, and macerate in a covered vessel for forty-eight hours, stirring frequently; then transfer to a percolator, and when the fluid ceases to pass, and the contents of the percolator have been properly packed, continue the percolation with water until fifteen pints of liquid have passed, or that which is passing has ceased to give a precipitate on the addition to it of an excess of solution of soda. Evaporate the percolated liquid in a porcelain or enamelled iron vessel at a temperature not exceeding 180° F. (82°·2 C.) until it is reduced to twenty fluid ounces.

Put fifty fluid grains of this liquid (*a*) with half an ounce of distilled water into a stoppered glass separator capable of holding four fluid ounces; add to this one fluid ounce of benzolated amylic alcohol and half a fluid ounce of solution of soda, shake them together thoroughly and repeatedly, then allow them to remain at rest until the spirituous solution of the alkaloids shall have separated and formed a distinct stratum over the dark-coloured alkaline solution of the other constituents of the extract. Run off the latter by the stopcock, add a little more distilled water to wash away any still adhering alkaline solution from the separator and its contents, and having run off this as before, as completely as possible, decant the spirituous solution into a small porcelain or glass dish the weight of which is known. Evaporate by the heat of a water-bath until a perfectly dry residue is left. The weight now of the dish and its contents, after deducting the known weight of the dish, will give that of the alkaloids, and this multiplied by 2 will give the parts by weight of the alkaloids in 100 fluid parts of the liquid (*a*).

Having thus ascertained the alkaloidal strength of the liquid (*a*), every fluid part of it containing five grains of total alkaloids is first to be brought to the volume of eighty-five grains by evaporation, or if necessary by dilution with water, then 12·5 fluid grains of rectified spirit are to be added, and the final adjustment of the volume to 100 fluid grains is to be effected by the addition of distilled water. The finished liquid extract will thus contain five grains of the alkaloids of the bark in every 100 fluid grains.

Dose.—5 to 10 minims.

EXTRACTUM COCÆ LIQUIDUM.

Liquid Extract of Coca.

Take of

Coca, in No. 40 powder . . .	20 ounces
Proof Spirit.	a sufficiency

Mix the coca with two pints of the spirit, and macerate in a closed vessel for forty-eight hours; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with more of the spirit until the coca is exhausted. Reserve the first fifteen fluid ounces of the percolate, and evaporate the remainder by a water-bath to the consistence of a soft extract, dissolve this in the reserved portion, and make up the volume to twenty fluid ounces by the addition of more spirit.

Dose.—½ to 2 drachms.

EXTRACTUM COLCHICI.

Extract of Colchicum.

Take of

Fresh Colchicum Corms, deprived of their coats	7 pounds

Crush the corms; press out the juice; allow the feculence to subside, and heat the clear liquor to 212° F. (100° C.); then strain through flannel and evaporate by a water-bath at a temperature not exceeding 160° F. (71°·1 C.) until the extract is of a suitable consistence for forming pills.

Dose.—½ to 2 grains.

EXTRACTUM COLCHICI ACETICUM.

Acetic Extract of Colchicum.

Take of

Fresh Colchicum Corms, deprived of their coats	7 pounds
Acetic Acid	6 fluid ounces

Crush the corms, add the acetic acid, and press out the juice; allow the feculence to subside, and heat the clear liquor to 212° F. (100° C.); then strain through flannel, and evaporate by a water-bath at a temperature not exceeding 160° F. (71°·1 C.) to the consistence of a soft extract.

Dose.—½ to 2 grains.

EXTRACTUM COLOCYNTHIDIS COMPOSITUM.

Compound Extract of Colocynth.

Take of

Colocynth Pulp	6 ounces
Extract of Socotrine Aloes	12 ounces
Resin of Scammony	4 ounces
Curd Soap, in powder	3 ounces
Cardamom Seeds, in the finest powder	1 ounce
Proof Spirit	1 gallon

Macerate the colocynth in the spirit for four days; press out the tincture and distil off the spirit; then add the aloes, scammony, and soap, and evaporate by a water-bath until the extract is of a suitable consistence for forming pills, adding the cardamoms towards the end of the process.

Dose.—3 to 10 grains.

EXTRACTUM CONII.

Extract of Hemlock.

Take of

The fresh leaves and young branches of Hemlock	112 pounds

Bruise in a stone mortar, and press out the juice; heat it gradually to 130° F. (54°·4 C.), and separate the green colouring matter by a calico filter. Heat the strained liquor to 200° F. (93°·3 C.) to coagulate the albumen, and again filter. Evaporate the filtrate by a water-bath to the consistence of a thin syrup; then add to it the green colouring matter previously separated and passed through a hair sieve, and, stirring the whole together assiduously, continue the evaporation at a temperature not exceeding 140° F. (60° C.), until the extract is of a suitable consistence for forming pills.

Dose.—2 to 6 grains.

Preparations.

Pilula Conii Composita .	$2\frac{1}{2}$ parts in 3

EXTRACTUM ERGOTÆ LIQUIDUM.

Liquid Extract of Ergot.

Take of

Ergot, crushed	1 pound
Distilled Water	6 pints
Rectified Spirit	6 fluid ounces

Digest the ergot in four pints of the water for twelve hours. Draw off the infusion and repeat the digestion with the remainder of the water. Press out, strain, and evaporate the liquors by the heat of a water-bath to eleven fluid ounces; when cold, add the spirit. Allow it to stand for an hour to coagulate, then filter. The product should measure sixteen fluid ounces.

Dose.—10 to 30 minims.

Preparation.—Ergotinum.

EXTRACTUM FILICIS LIQUIDUM.

Liquid Extract of Male Fern.

Take of

Male Fern, in coarse powder	2 pounds
Ether	4 pints, or a sufficiency

Pack the male fern closely in a percolator, and pass the ether slowly through it until it passes colourless. Let the ether evaporate on a water-bath, or recover it by distillation, and preserve the oily extract.

Dose.—15 to 30 minims.

EXTRACTUM GELSEMII ALCOHOLICUM.

Alcoholic Extract of Gelsemium.

Take of

Gelsemium, in No. 60 powder	1 pound
Rectified Spirit Distilled Water } of each	a sufficiency

Mix the gelsemium with two pints of the spirit, and macerate in a closed vessel for forty-eight hours; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with water until two pints of liquor have been collected. Evaporate the percolated liquor by a water-bath until the extract has acquired a suitable consistence.

Dose.—½ to 2 grains.

EXTRACTUM GENTIANÆ.

Extract of Gentian.

Take of

Gentian Root, sliced	1 pound
Boiling Distilled Water	1 gallon

Infuse the gentian in the water for two hours; boil for fifteen minutes; pour off, press, and strain. Then evaporate the liquor by a water-bath until the extract is of a suitable consistence for forming pills.

Dose.—2 to 10 grains.

EXTRACTUM GLYCYRRHIZÆ.

Extract of Liquorice.

Take of

Liquorice Root, in No. 20 powder	1 pound
Distilled Water	4 pints

Macerate the liquorice root with two pints of the water for twelve hours, strain and press; again macerate the pressed marc with the remainder of the water for six hours, strain and press. Mix the strained liquors, heat them to 212° F. (100° C.), and strain through flannel; then evaporate by a water-bath until the extract is of a suitable consistence for forming pills.

Preparations.

Confectio Sennæ	1 part in 75
Decoctum Aloes Compositum	1 ounce in 25 fluid ounces
Tinctura Aloes	1½ ounce to 1 pint
Trochisci Opii	

Dose.—5 grains to 1 drachm.

EXTRACTUM GLYCYRRHIZÆ LIQUIDUM.

Liquid Extract of Liquorice.

Take of

Liquorice Root, in No. 20 powder . .	1 pound
Distilled Water	4 pints
Rectified Spirit	a sufficiency

Macerate the liquorice root with two pints of the water for twelve hours, strain and press; again macerate the pressed marc with the remainder of the water for six hours, strain and press. Mix the strained liquors, heat them to 212° F. (100° C.), and strain through flannel; then evaporate by a water-bath, until it has acquired, when cold, a specific gravity of 1·160; add to this one-sixth of its volume of rectified spirit; let the mixture stand for twelve hours, and filter.

Dose.—1 fluid drachm.

Preparations.

Mistura Sennæ Composita .	1 ounce in 1 pint
Tinctura Chloroformi et Morphinæ	

EXTRACTUM HÆMATOXYLI.

Extract of Logwood.

Take of

Logwood, in fine chips	1 pound
Boiling Distilled Water	1 gallon

Infuse the logwood in the water for twenty-four hours, then boil down to one-half, strain, and evaporate to dryness by a water-bath, stirring with a wooden spatula. Iron vessels should not be used.

Dose.—10 to 30 grains.

EXTRACTUM HYOSCYAMI.

Extract of Henbane.

Take of

The fresh leaves, flowering tops, and young branches of Henbane . .	112 pounds

Bruise in a stone mortar and press out the juice; heat it gradually to 130° F. (54°·4 C.), and separate the green colouring matter by a calico filter. Heat the strained liquor to 200° F. (93°·3 C.) to coagulate the albumen, and again filter. Evaporate the filtrate by a water-bath to the consistence of a thin syrup; then add to it the green colouring matter previously separated and passed through a hair sieve, and, stirring the whole assiduously, continue the evaporation at a temperature not exceeding 140° F. (60° C.), until the extract is of a suitable consistence for forming pills.

Dose.—5 to 10 grains.

Preparation.

Pilula Colocynthidis et Hyoscyami, 1 part in 3.

EXTRACTUM JABORANDI.

Extract of Jaborandi.

Take of

Jaborandi, in No. 40 powder	1 pound
Proof Spirit Distilled Water } of each	a sufficiency

Mix the jaborandi with two pints of the spirit, and macerate in a closed vessel for forty-eight hours; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with water until two pints of liquid have been collected. Evaporate the percolated liquid until the extract has acquired a suitable consistence.

Dose.—2 to 10 grains.

EXTRACTUM JALAPÆ.

Extract of Jalap.

Take of

Jalap, in coarse powder	1 pound
Rectified Spirit	4 pints
Distilled Water	1 gallon

Macerate the jalap in the spirit for seven days; press out the tincture, then filter, and distil off the spirit, leaving a soft extract. Again macerate the residual jalap in the water for four hours, express, strain through flannel, and evaporate by a water-bath to a soft extract. Mix the two extracts, and evaporate at a temperature not exceeding 140° F. (60° C.) until it has acquired a suitable consistence for forming pills.

Dose.—5 to 15 grains.

EXTRACTUM KRAMERIÆ.

Extract of Rhatany.

Take of

Rhatany Root, in No. 40 powder . .	1 pound
Distilled Water	a sufficiency

Macerate the rhatany in a pint and a half of the water for twenty-four hours; then pack in a percolator, and add more distilled water, until twelve pints have been collected, or the rhatany is exhausted. Evaporate the liquor by a water-bath to dryness.

Dose.—5 to 20 grains.

EXTRACTUM LACTUCÆ.

Extract of Lettuce.

Take of

The flowering herb of Lettuce . .	112 pounds

Bruise in a stone mortar, and press out the juice; heat it gradually to 130° F. (54°·4 C.), and separate the green colouring matter by a calico filter. Heat the strained liquor to 200° F. (93°·3 C.) to coagulate the albumen, and again filter. Evaporate the filtrate by a water-bath to the consistence of a thin syrup; then add to it the green colouring matter previously separated and passed through a hair sieve, and, stirring the whole together assiduously, continue the evaporation at a temperature not exceeding 140° F. (60° C.) until the extract is of a suitable consistence for forming pills.

Dose.—5 to 15 grains.

EXTRACTUM LUPULI.

Extract of Hop.

Take of

Hop	1 pound
Rectified Spirit	1½ pint
Distilled Water	1 gallon

Macerate the hop in the spirit for seven days, press out the tincture, filter, and distil off the spirit, leaving a soft extract. Boil the residual hop with the water for one hour, press out the liquor, strain, and evaporate by a water-bath to the consistence of a soft extract. Mix the two extracts, and evaporate at a temperature not exceeding 140° F. (60° C.) until it has acquired a suitable consistence for forming pills.

Dose.—5 to 15 grains.

EXTRACTUM MEZEREI ÆTHEREUM.

Ethereal Extract of Mezereon.

Take of

Mezereon Bark, cut small . . .	1 pound
Rectified Spirit	8 pints
Ether	1 pint

Macerate the mezereon in six pints of the spirit for three days, with frequent agitation; strain and press. To the residue of the mezereon add the remainder of the spirit, and again macerate for three days, with frequent agitation; strain and press. Mix and filter the strained liquors; recover the greater part of the spirit by distillation, evaporate what remains to the consistence of a soft extract; put this into a stoppered bottle with the ether, and macerate for twenty-four hours, shaking them frequently. Decant the ethereal solution; recover part of the ether by distillation, and evaporate what remains to the consistence of a soft extract.

Preparation.

Linimentum Sinapis Compositum .	8 grains in 1 fluid ounce

EXTRACTUM NUCIS VOMICÆ.

Extract of Nux Vomica.

Take of

Nux Vomica	1 pound
Rectified Spirit	64 fluid ounces
Distilled Water	16 fluid ounces

Heat the previously split seeds to a temperature of 212° F. (100° C.) for three hours, and then reduce to a fine powder. Mix the spirit with the water, and make the powdered nux vomica into a paste with one pint of the mixture. Allow this to macerate for twelve hours, then transfer to a percolator, and add another pint of the mixture. When this has percolated, pour on the remainder of the diluted spirit in successive portions; press the marc, filter the expressed liquor, and add it to the percolated liquid.

Take of this liquid one fluid ounce, and estimate the amount of total alkaloid in the following way:—Evaporate almost to dryness over a water-bath, dissolve the residue in two fluid drachms of chloroform and half a fluid ounce of dilute sulphuric acid, with an equal bulk of water; agitate and warm gently. When the liquors have separated, draw off the chloroform, and add to the acid liquor excess of solution of ammonia and half a fluid ounce of chloroform; well agitate, gently warm, and, after the liquors have completely separated, transfer the chloroform to a weighed dish, evaporate over a water-bath, and dry for one hour at 212° F. (100° C.) Allow the residue of total alkaloid to cool, and then weigh.

Take of the percolated liquid as much as contains 131¼ grains of total alkaloid, distil off the spirit, and evaporate over a water-bath until the extract weighs two ounces. This extract will contain fifteen per cent. of total alkaloid.

Test.—Ten grains of the extract when treated in the following manner should yield one grain and a half of total alkaloid. Dissolve the extract in half a fluid ounce of water, heating gently if necessary, and add a drachm of carbonate of sodium previously dissolved in half a fluid ounce of water and half a fluid ounce of chloroform; agitate, warm gently, and separate the chloroform. Add to this half a fluid ounce of dilute sulphuric acid with an equal bulk of water; again agitate, warm, and separate the acid liquor from the chloroform. To this acid liquor add now an excess of ammonia, and agitate with half a fluid ounce of chloroform; when the liquors have separated, transfer the chloroform to a weighed dish, and evaporate the chloroform over a water-bath. Dry the residue for one hour, and weigh.

Dose.—½ to 2 grains.

Preparation.—Tinctura Nucis Vomicæ.

EXTRACTUM OPII.

Extract of Opium.

Take of

Opium, in powder	1 pound
Distilled Water	6 pints

Macerate the opium in two pints of the water for twenty-four hours, and express the liquor. Thoroughly mix the residue of the opium with two pints of water, macerate again for twenty-four hours, and express. Repeat the operation a third time. Mix the liquors, strain through flannel, and evaporate by a water-bath until the product weighs half a pound.

Test.—Analysed as described under 'Opium,' this extract should yield about twenty per cent. of morphine.

Dose.—½ to 2 grains.

Preparations.

Extractum Opii Liquidum .	1 ounce in 1 pint
Trochisci Opii . . .	$\frac{1}{10}$ grain in each lozenge
Vinum Opii . . .	1 ounce in 1 pint

EXTRACTUM OPII LIQUIDUM.

Liquid Extract of Opium.

Take of

Extract of Opium	1 ounce
Distilled Water	16 fluid ounces
Rectified Spirit	4 fluid ounces

Macerate the extract of opium in the water for an hour, stirring frequently; then add the spirit, and filter. The product should measure one pint.

It contains 22 grains of extract of opium, nearly, in 1 fluid ounce. Specific gravity from 0·985 to 0·995.

Test.—Analysed as described under 'Opium,' this liquid extract should yield about one per cent. of morphine.

Dose.—10 to 40 minims.

EXTRACTUM PAPAVERIS.

Extract of Poppy.

Take of

Poppy Capsules, freed from the seeds and in No. 20 powder . . .	1 pound
Rectified Spirit	2 ounces
Boiling Distilled Water . . .	a sufficiency

Mix the poppy capsules with two pints of the water, and infuse for twenty-four hours, stirring frequently; then pack in a percolator, and, adding more of the water, allow the liquor slowly to pass until about a gallon has been collected, or until the residue is exhausted. Evaporate the liquor by a water-bath until it is reduced to a pint, and, when cold, add the spirit. Let the mixture stand for twenty-four hours, then separate the clear liquor by filtration, and evaporate this by a water-bath until the extract has acquired a suitable consistence for forming pills.

Dose.—2 to 5 grains.

EXTRACTUM PAREIRÆ.

Extract of Pareira.

Take of

Pareira Root, in No. 40 powder .	1 pound
Boiling Distilled Water . . .	a sufficiency

Digest the pareira root with a pint of the water for twenty-four hours, then pack in a percolator, and, adding more of the water, allow the liquor slowly to pass until about a gallon has been collected, or the pareira is exhausted. Evaporate the liquor by a water-bath until the extract has acquired a suitable consistence for forming pills.

Dose.—10 to 30 grains.

Preparation.—Extractum Pareiræ Liquidum.

EXTRACTUM PAREIRÆ LIQUIDUM.

Liquid Extract of Pareira.

Take of

Extract of Pareira Distilled Water Rectified Spirit	of each . . a sufficiency

Dissolve 4 parts of the extract in a sufficient quantity of a mixture of one fluid part of rectified spirit and three parts of water to form sixteen fluid parts of liquid extract. Filter, if necessary.

Dose.—½ to 2 fluid drachms.

EXTRACTUM PHYSOSTIGMATIS.

Extract of Calabar Bean.

Take of

Calabar Bean, in No. 40 powder . .	1 pound
Rectified Spirit	4 pints

Macerate the bean for forty-eight hours with one pint of the spirit in a closed vessel, agitating occasionally; then transfer to a percolator, and, when the fluid ceases to pass, add the remainder of the spirit so that it may slowly percolate through the powder. Subject the residue of the bean to pressure, adding the expressed liquor to the product of the percolation; filter, distil off most of the spirit, and evaporate what is left in the retort by a water-bath to the consistence of a soft extract.

Dose.—$\frac{1}{16}$ to $\frac{1}{4}$ grain.

Preparation.—Physostigmina.

EXTRACTUM QUASSIÆ.

Extract of Quassia.

Take of

Quassia Wood, rasped . . .	1 pound
Distilled Water	a sufficiency

Macerate the quassia with eight fluid ounces of the water for twelve hours; then pack in a percolator, and, adding more of the water, allow the liquor slowly to pass until the quassia is exhausted. Evaporate the liquor; filter before it becomes too thick; and again evaporate by a water-bath until the extract is of a suitable consistence for forming pills.

Dose.—3 to 5 grains.

EXTRACTUM RHAMNI

Extract of Rhamnus Frangula.

Synonym.—Extractum Frangulæ.

Take of

Rhamnus Frangula Bark, in No. 40 powder	1 pound
Proof Spirit Water } of each	a sufficiency

Mix the rhamnus with two pints of the spirit, and macerate in a closed vessel for forty-eight hours; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with water until three pints of liquor have been collected, or the rhamnus is exhausted. Evaporate the percolated liquor by a water-bath until the extract has acquired a suitable consistence.

Dose.—15 to 60 grains.

EXTRACTUM RHAMNI FRANGULÆ LIQUIDUM.

Liquid Extract of Rhamnus Frangula.

Take of

Rhamnus Frangula Bark, in coarse powder	1 pound
Rectified Spirit	4 fluid ounces
Distilled Water	a sufficiency

Boil the bark in three or four successive quantities of the water, until exhausted. Evaporate the liquors by the heat of a water-bath to twelve fluid ounces; when cold add the spirit, allow the mixture to remain for some hours, then filter, and make up to the volume of sixteen fluid ounces with distilled water.

Dose.—1 to 4 fluid drachms.

EXTRACTUM RHEI.

Extract of Rhubarb.

Take of

Rhubarb Root, in No. 40 powder	1 pound
Proof Spirit Distilled Water } of each	a sufficiency

Mix the rhubarb with three pints of the spirit, and macerate in a closed vessel for forty-eight hours; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with water until five pints of liquor have been collected, or the rhubarb is exhausted. Evaporate the percolated liquor by a water-bath until the extract has acquired a suitable consistence for forming pills.

Dose.—5 to 15 grains.

EXTRACTUM SARSÆ LIQUIDUM.

Liquid Extract of Sarsaparilla.

Synonym.—Liquor Sarsæ.

Take of

Jamaica Sarsaparilla, in No. 40 powder .	40 ounces
Proof Spirit	2 pints
Sugar	5 ounces
Distilled Water	12 pints

Mix the sarsaparilla with the spirit, and macerate in a closed vessel for ten days; then press out twenty fluid ounces of liquor, and set this aside. Mix the pressed residue with the water, and macerate at 160° F. (71°·1 C.) for sixteen hours, then strain and press out the liquid, dissolve the sugar in this, and evaporate in a water-bath to about eighteen fluid ounces. Mix the two liquids, and make up the volume to forty fluid ounces by the addition of distilled water.[1]

Dose.—2 to 4 fluid drachms.

EXTRACTUM STRAMONII.

Extract of Stramonium.

Take of

Stramonium Seeds, in No. 40 powder	1 pound
Ether	1 pint, or a sufficiency
Distilled Water Proof Spirit } of each . . .	a sufficiency

Shake the ether in a bottle with half a pint of the water, and after separation decant the ether. Pack the stramonium in a percolator and free it from its oil by passing the washed ether slowly through it. Having removed and rejected the ethereal solution, pour the spirit over the residue of the stramonium in the percolator, and allow it to pass through slowly until the powder is exhausted. Distil off most of the spirit from the tincture, and evaporate the residue by a water-bath until the extract has acquired a suitable consistence for forming pills.

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[1] Improved exhaustion of the root requires this increased proportion of product as compared with that of B. P. 1867.

Dose.—¼ to ½ grain.

EXTRACTUM TARAXACI.

Extract of Dandelion.

Take of

Fresh Dandelion Root	4 pounds

Crush the root; press out the juice, and allow it to deposit; heat the clear liquor to 212° F. (100° C.), and maintain the temperature for ten minutes; then strain, and evaporate by a water-bath at a temperature not exceeding 160° F. (71°·1 C.) until the extract has acquired a suitable consistence for forming pills.

Dose.—5 to 30 grains.

EXTRACTUM TARAXACI LIQUIDUM.

Liquid Extract of Dandelion.

Take of

Dry Dandelion Root, in No. 20 powder .	40 ounces
Proof Spirit	4 pints
Distilled Water	a sufficiency

Mix the dandelion with the spirit, and macerate in a closed vessel for forty-eight hours; then press out twenty fluid ounces of liquid, and set this aside. Mix the pressed residue with the water, and again macerate for forty-eight hours; press out and strain the liquid; evaporate this by a water-bath to about eighteen fluid ounces. Mix the two liquids, and make up the volume to forty fluid ounces by the addition of distilled water.

Dose.—¼ to 2 fluid drachms.

FARINA TRITICI.

Wheaten Flour.

The grain of Triticum sativum, *Lam.*; *Bentl. and Trim. Med. Pl.* vol. iv. plate 294, ground and sifted.

Preparation.—Cataplasma Fermenti.

FEL BOVINUM PURIFICATUM.

Purified Ox Bile.

The purified gall of the Ox, Bos Taurus, *Linn.*

Take of

Fresh Ox Bile	1 pint
Rectified Spirit	a sufficiency

Evaporate the bile to five fluid ounces, and mix it with half a pint of the spirit by agitation in a bottle, setting the mixture aside for twelve hours or until the sediment subsides. Decant the clear solution, and filter the remainder, washing the filter and contents with a little more of the spirit. Distil off most of the spirit from the mixed liquids, and evaporate the residue in a porcelain dish by the heat of a water-bath until it acquires a suitable consistence for forming pills.

Characters and Tests.—A yellowish-green substance, having a taste partly sweet and partly bitter, soluble in water and in spirit. A solution of one or two grains of it, in about a fluid drachm of water, when treated, first with a drop of freshly made syrup consisting of one part of sugar and four of water, and then with sulphuric acid cautiously added until the precipitate at first formed is redissolved, gradually acquires a cherry-red colour, which changes in succession to carmine, purple, and violet. Its watery solution gives no precipitate on the addition of rectified spirit.

Dose.—5 to 10 grains.

FERRI ARSENIAS.

Arseniate of Iron.

Arseniates of iron, with some oxide.

Take of

Sulphate of Iron	20¾ ounces
Arseniate of Sodium, dried at 300° F. (148°·9 C.)	15¾ ounces
Bicarbonate of Sodium . . .	4½ ounces
Boiling Distilled Water . . .	a sufficiency

Dissolve the arseniate of sodium in about five pints, and the sulphate of iron in about six pints of the water, mix the two solutions, adding the bicarbonate of sodium dissolved in a little distilled water. Stir thoroughly. Collect the white precipitate which has formed, on a calico filter, and wash until the washings cease to be affected by a dilute solution of chloride of barium. Squeeze the washed precipitate between folds of strong linen in a screw-press, and dry it on porous bricks in a warm air-chamber the temperature of which shall not exceed 100° F. (37°·8 C.)

Characters and Tests.—A tasteless amorphous powder of a greenish colour, insoluble in water, but readily dissolved by hydrochloric acid. The latter solution gives a copious light-blue precipitate with ferrocyanide of potassium, and a still more abundant one of a deeper colour with ferricyanide of potassium. A small quantity, boiled with an excess of caustic soda and filtered, gives, when exactly neutralised by nitric acid, a brick-red precipitate on the addition of solution of nitrate of silver. The solution in hydrochloric acid when diluted gives no precipitate with chloride of barium. One hundred grains dissolved in an excess of sulphuric acid diluted with water continues to give a blue precipitate with ferrocyanide of potassium, until at least 225 grain-measures of the volumetric solution of bichromate of potassium have been added.

Dose.—$\frac{1}{16}$ to $\frac{1}{2}$ grain.

FERRI CARBONAS SACCHARATA.

Saccharated Carbonate of Iron.

Carbonate of iron, $FeCO_3xH_2O$, mixed with peroxide of iron and sugar, the carbonate (if reckoned as anhydrous) forming about one-third of the mixture.

Take of

Sulphate of Iron	2 ounces
Carbonate of Ammonium	1¼ ounce
Boiling Distilled Water	2 gallons
Refined Sugar	1 ounce

Dissolve the sulphate of iron and the carbonate of ammonium each in half a gallon of the water, and mix the two solutions with brisk stirring in a deep cylindrical vessel, which is then to be covered as accurately as possible. Set the mixture by for twenty-four hours, and from the precipitate, which has subsided, separate the supernatant solution by a siphon. Pour on the remainder of the water, stir well, and, after subsidence, again remove the clear solution. Collect the resulting carbonate on a calico filter, and, having first subjected it to expression, rub it with the sugar in a porcelain mortar. Finally, dry the mixture at a temperature not exceeding 212° F. (100° C.)

Characters and Tests.—Small coherent lumps of a grey colour with a sweet very feebly chalybeate taste. It dissolves with effervescence in warm hydrochloric acid diluted with half its volume of water, and the solution gives but a very slight precipitate with chloride of barium. Thirty grains, dissolved in excess of phosphoric acid and diluted with water, continues to give a blue precipitate with the ferricyanide of potassium, until at least 287·5 grain-measures of the volumetric solution of bichromate of potassium have been added.

Dose.—5 to 30 grains.

Preparation.—Pilula Ferri Carbonatis, 1 part in 1¼.

FERRI ET AMMONII CITRAS.

Citrate of Iron and Ammonium.

Synonyms.—**Ferri et Ammoniæ Citras; Citrate of Iron and Ammonia.**

Take of

Solution of Persulphate of Iron	10 fluid ounces, or a sufficiency
Solution of Ammonia	23 fluid ounces, or a sufficiency
Citric Acid	4 ounces
Distilled Water	a sufficiency

Mix sixteen fluid ounces of the solution of ammonia with two pints of distilled water, and to this add gradually the solution of persulphate of iron, previously diluted with two pints of distilled water, stirring them constantly and briskly, and taking care that ammonia is, even finally, in slight excess as indicated by the odour. Let the mixture stand for two hours, stirring it occasionally, then put it on a calico filter, and when the liquor has drained away, wash the precipitated ferric hydrate with distilled water until that which passes through the filter ceases to give a precipitate with chloride of barium. Dissolve the citric acid in four ounces of distilled water, and having applied the heat of a water-bath, add the ferric hydrate, previously well drained, and stir them together until nearly the whole of the hydrate has dissolved, or until the citric acid is saturated with ferric hydrate (prepared, if necessary, from more of the solution of persulphate of iron). Let the solution cool, then add five and a half fluid ounces of solution of ammonia. Filter through flannel, adding some distilled water if necessary; evaporate to the consistence of syrup, the presence of a very slight excess of ammonia being maintained, and dry in thin layers on flat porcelain or glass plates at a temperature not exceeding 100° F. (37°·8 C.) Remove the dry salt in flakes, and keep it in a stoppered bottle.

Characters and Tests.—In thin transparent scales of a deep red colour, slightly sweetish and astringent in taste. It feebly reddens litmus paper, is soluble in water, and almost insoluble in rectified spirit. Heated with solution of potash it evolves ammonia and deposits ferric hydrate. The alkaline solution from which the iron has separated does not, when slightly supersaturated with acetic acid, give any crystalline deposit. When incinerated with exposure to air, it leaves about thirty per cent. of peroxide of iron which is not alkaline to litmus.

Dose.—5 to 10 grains.

Preparation.

Vinum Ferri Citratis . 8 grains in 1 fluid ounce

FERRI ET QUININÆ CITRAS.

Citrate of Iron and Quinine.

Synonyms.—Ferri et Quiniæ Citras; Citrate of Iron and Quinia.

Take of

Solution of Persulphate of Iron .	4½ fluid ounces
Sulphate of Quinine . . .	1 ounce
Diluted Sulphuric Acid . .	12 fluid drachms
Citric Acid	3 ounces and 30 grains
Solution of Ammonia Distilled Water } of each .	a sufficiency

Mix eight fluid ounces of the solution of ammonia with two pints of distilled water, and to this add the solution of persulphate of iron previously diluted with two pints of distilled water, stirring them constantly and briskly. Let the mixture stand for two hours, stirring it occasionally, then put it on a calico filter, and when the liquid has drained away, wash the precipitated ferric hydrate with distilled water until that which passes through the filter ceases to give a precipitate with chloride of barium.

Mix the sulphate of quinine with eight ounces of distilled water, add the diluted sulphuric acid, and when the salt is dissolved precipitate the quinine with a slight excess of solution of ammonia. Collect the precipitate on a filter, and wash it with a pint and a half of distilled water.

Dissolve the citric acid in five ounces of distilled water, and, having applied the heat of a water-bath, add the ferric hydrate, previously well drained; stir them together, and, when the hydrate has dissolved, add the precipitated quinine, continuing the agitation until this also has dissolved. Let the solution cool, then add in small quantities at a time twelve fluid drachms of solution of ammonia diluted with two fluid ounces of distilled water, stirring the solution briskly, and allowing the quinine which separates with each addition of ammonia to dissolve before the next addition is made. Filter the solution, evaporate it to the consistence of a thin syrup, then dry it in thin layers on flat porcelain or glass plates at a temperature of 100° F. (37°·8 C.) Remove the dry salt in flakes, and keep it in a stoppered bottle.

Characters and Tests.—Thin scales of a greenish golden-yellow colour, somewhat deliquescent, and entirely soluble in cold water. The solution is very slightly acid, and is precipitated reddish-brown by solution of soda, white by solution of ammonia, blue by the ferrocyanide and ferricyanide of potassium, and greyish-black by tannic acid. The salt has a bitter taste resembling that of quinine, and also possesses a chalybeate flavour. When burned with exposure to air, it leaves a residue which when moistened with water is not alkaline to test-paper. Fifty grains dissolved in a fluid ounce of water and treated with a slight excess of ammonia gives a white precipitate, which, when dissolved out by successive treatments of the fluid with ether or chloroform, and the latter evaporated, and the residue dried until it ceases to lose weight, weighs eight grains. The precipitate is almost entirely soluble in a little pure ether, and when burned leaves but a minute residue.

Dose.—5 to 10 grains.

FERRI PEROXIDUM HYDRATUM.

Peroxide of Iron.

Synonyms.—**Ferri Sesquioxidum; Ferri Oxidum Rubrum; Hydrous Peroxide of Iron; Ferric Oxyhydrate.**

Fe_2O_3,H_2O, or $Fe_2O_2(HO)_2$.

Take of

Solution of Persulphate of Iron .	4 fluid ounces
Solution of Soda	33 fluid ounces
Distilled Water	a sufficiency

Mix the solution of persulphate of iron with a pint of the distilled water, and add this gradually to the solution of soda, stirring them constantly and briskly. Let the mixture stand for two hours, stirring it occasionally, then put it on a calico filter, and, when the liquid has drained away, wash the precipitated ferric hydrate with distilled water until what passes through the filter ceases to give a precipitate with chloride of barium.

Dry it at a temperature not exceeding 212° F. (100° C.), until it ceases to lose weight, then reduce it to fine powder.

Characters and Tests.—A reddish-brown powder, destitute of taste, and not magnetic. It dissolves completely, though slowly, with the aid of heat, in hydrochloric acid, diluted with half its volume of water, and the solution gives a copious precipitate with the ferrocyanide, but none with the ferricyanide, of potassium. Heated to dull redness in a test-tube, it yields about ten per cent. of moisture.

Dose.—5 to 30 grains.

Preparation.

Emplastrum Ferri . . .	1 part in 11

FERRI PHOSPHAS.

Phosphate of Iron.

Ferrous phosphate, $Fe_3(PO_4)_2 8H_2O$, at least 47 per cent.; with ferric phosphate and some oxide.

Take of

Sulphate of Iron	3 ounces
Phosphate of Sodium	2¼ ounces
Bicarbonate of Sodium	¾ ounce
Boiling Distilled Water	a sufficiency

Dissolve the sulphate of iron in thirty ounces of the water, and the phosphate of sodium in a similar quantity of water. When each solution has cooled to between 100° and 130° F. (37°·8 and 54°·4 C.), add the latter to the former, pouring in also a solution of the bicarbonate of sodium in a little distilled water. Mix thoroughly. Transfer the precipitate to a calico filter, and wash it with hot distilled water till the filtrate ceases to give a precipitate with chloride of barium. Finally dry the precipitate at a temperature not exceeding 120° F. (48°·9 C.)

Characters and Tests.—A slate-blue amorphous powder, insoluble in water, soluble in hydrochloric acid. The solution yields a precipitate with both the ferrocyanide and ferricyanide of potassium, that afforded by the latter being the more abundant; and when treated with tartaric acid and an excess of ammonia, and subsequently with the solution of ammonio-sulphate of magnesium, lets fall a crystalline precipitate. When the salt is digested in hydrochloric acid with a lamina of pure copper, a dark deposit does not form on the metal. Thirty grains dissolved in hydrochloric acid continues to give a blue precipitate with ferricyanide of potassium until at least 279 grain-measures of the volumetric solution of bichromate of potassium have been added.

Dose.—5 to 10 grains.

Preparation containing Phosphate of Iron.

Syrupus Ferri Phosphatis	1 grain in 1 fluid drachm

FERRI SULPHAS.

Sulphate of Iron.

$FeSO_4,7H_2O$.

Take of

Iron Wire	4 ounces
Sulphuric Acid	4 fluid ounces
Distilled Water	1½ pint

Pour the water on the iron placed in a porcelain dish, add the sulphuric acid, and when the disengagement of gas has nearly ceased, boil for ten minutes. Filter now through paper, and, after the lapse of twenty-four hours, separate the crystals which have been deposited from the solution. Let these be dried on filtering paper placed on porous bricks, and preserved in a stoppered bottle.

Characters and Tests.—In oblique rhombic prisms, of a pale greenish-blue colour and styptic taste ; insoluble in rectified spirit, soluble in water. The aqueous solution is clear, gives a white precipitate with chloride of barium, a blue with ferricyanide of potassium, and a nearly white or light-blue one with ferrocyanide of potassium. It gives no precipitate with sulphuretted hydrogen. 42·1 grains dissolved in water acidulated with sulphuric acid continues to give a blue precipitate with ferricyanide of potassium until about 500 grain-measures of the volumetric solution of bichromate of potassium have been added.

Dose.—1 to 5 grains.

Preparations.

Ferri Sulphas Exsiccata	28 parts yield 17
Pilula Aloes et Ferri	1 part in 7

FERRI SULPHAS EXSICCATA.

Dried Sulphate of Iron.

$FeSO_4,H_2O$.

Take of

Sulphate of Iron	4 ounces

Expose it in a porcelain or iron dish to a temperature of 212° F. (100° C.), until aqueous vapour ceases to be given off. Reduce the residue, which should weigh rather less than two and a half ounces, to a fine powder, and preserve it in a stoppered bottle.

Test.—Ten grains dissolved in distilled water acidulated with sulphuric acid continues to give a blue precipitate with ferricyanide of potassium until at least 191 grain-measures of the volumetric solution of bichromate of potassium have been added, corresponding to at least 97½ per cent. of pure dried sulphate of iron.

Dose.—½ to 3 grains.

FERRI SULPHAS GRANULATA.

Granulated Sulphate of Iron.

$FeSO_4,7H_2O$.

Take of

Iron Wire	4 ounces
Sulphuric Acid	4 fluid ounces
Distilled Water	1½ pint
Rectified Spirit	8 fluid ounces

Pour the water on the iron placed in a porcelain capsule, add the sulphuric acid, and when the disengagement of gas has nearly ceased, boil for ten minutes, and then filter the solution into a jar containing the spirit, stirring the mixture so that the salt shall separate in minute granular crystals. Let these, deprived by decantation of adhering liquid, be transferred on filtering paper to porous tiles, and dried by exposure to the atmosphere. They should be preserved in a stoppered bottle.

Characters and Tests.—In small granular crystals of a pale greenish-blue colour. In other respects corresponds to the characters and tests for sulphate of iron. 41·7 grains dissolved in distilled water acidulated with sulphuric acid continues to give a blue precipitate with ferricyanide of potassium until 500 grain-measures of the volumetric solution of bichromate of potassium have been added.

Dose.—1 to 5 grains.

FERRUM.

Iron.

Annealed iron wire, having a diameter about 0·005 of an inch (about No. 35 wire gauge), or wrought iron nails; free from oxide.

Preparations of Iron.

Emplastrum Ferri
Ferri Arsenias
,, Carbonas Saccharata
,, et Ammonii Citras
,, et Quininæ Citras
,, Peroxidum Hydratum
,, Phosphas
,, Sulphas
,, Sulphas Exsiccata
,, Sulphas Granulata
Ferrum Redactum
,, Tartaratum
Liquor Ferri Acetatis
,, ,, ,, Fortior
,, ,, Dialysatus
Liquor Ferri Perchloridi
,, ,, ,, Fortior
,, ,, Pernitratis
,, ,, Persulphatis
Mistura Ferri Aromatica
,, ,, Composita
Pilula Ferri Carbonatis
,, ,, Iodidi
Syrupus Ferri Iodidi
,, ,, Phosphatis
Tinctura Ferri Acetatis
,, ,, Perchloridi
Trochisci Ferri Redacti
Vinum Ferri
,, ,, Citratis

FERRUM REDACTUM.

Reduced Iron.

Metallic iron, with a variable amount of oxide of iron.

Take of
Strong Solution of Perchloride of Iron
Solution of Ammonia
Zinc, granulated } of each . . a sufficiency
Sulphuric Acid
Chloride of Calcium
Distilled Water

Dilute the strong solution of perchloride of iron with five volumes of water; pour the mixture into such a quantity of solution of ammonia, diluted with five volumes of water, that the whole after thorough stirring has a distinct odour of ammonia. Wash the precipitated ferric hydrate until the washings are no longer rendered cloudy by solution of nitrate of silver. Dry the precipitate.

Introduce the resulting ferric oxyhydrate into an iron tube, confining it to the middle part of the tube by plugs of asbestos. Pass the tube through a furnace, and when it has been raised to a strong but not bright red heat, cause it to be traversed by a stream of hydrogen gas developed by the action on the zinc of some of the sulphuric acid diluted with eight times its volume of water. The gas before entering the tube must be rendered quite dry by being made to pass first through the remainder of the sulphuric acid, and then through a tube eighteen inches long packed with small fragments of the chloride of calcium. The farther end of the iron tube is to be connected by a cork with a bent tube dipping under water; and when the hydrogen is observed to pass through the water at about the rate that it bubbles through the sulphuric acid, the furnace is to be allowed to cool down to the temperature of the atmosphere, a slow current of hydrogen being still continued. The reduced iron is then to be withdrawn, and enclosed in a dry well-stoppered bottle.

Characters and Tests.—A fine greyish-black powder, strongly attracted by the magnet, and exhibiting metallic streaks when rubbed with firm pressure in a mortar. It dissolves in hydrochloric acid with the evolution of hydrogen, and without any smell of sulphuretted hydrogen, and the solution gives a light-blue precipitate with the ferrocyanide of potassium. Ten grains added to an aqueous solution of fifty grains of iodine and fifty grains of iodide of potassium, and digested in a small flask and gently heated, leaves not more than five grains undissolved, which should be entirely soluble in hydrochloric acid.

Dose.—1 to 5 grains.

Preparation.

Trochisci Ferri Redacti, 1 grain in each lozenge.

FERRUM TARTARATUM.

Tartarated Iron.

Synonyms.—Ferri Potassio-tartras; Ferrum Tartarizatum.

Take of

Solution of Persulphate of Iron .	6 fluid ounces
Solution of Ammonia . . .	11 fluid ounces
Acid Tartrate of Potassium, in powder	2 ounces
Distilled Water	a sufficiency

Mix the solution of ammonia with three pints of distilled water, and to this add gradually the solution of persulphate of iron previously diluted with two pints of distilled water, stirring constantly and briskly. Let the mixture stand for two hours, stirring it occasionally, then put it on a calico filter, and when the liquid has drained away wash the precipitate with distilled water until that which passes through the filter ceases to give a precipitate with chloride of barium. Mix the washed and drained precipitate intimately with the acid tartrate of potassium in a porcelain dish, and let the mixture stand for twenty-four hours; then, having applied heat, not exceeding 140° F. (60° C.), add gradually a pint of distilled water, and stir constantly until nothing more will dissolve. Filter; evaporate at a temperature not exceeding 140° F. (60° C.) to the consistence of syrup, and dry it in thin layers on flat porcelain or glass plates in a drying closet at not much above

100° F. (37°·8 C.) Remove the dry salt in flakes, and keep it in stoppered bottles.

Characters and Tests.—Thin transparent scales of a deep garnet colour, slightly sweetish and astringent in taste, soluble in water and sparingly soluble in spirit. The aqueous solution, when acidulated with hydrochloric acid, gives a copious blue precipitate with the ferrocyanide, but none with the ferricyanide of potassium. When the salt is boiled with solution of soda, ferric hydrate separates, and the filtered solution when slightly acidulated by acetic acid gives, as it cools, a crystalline deposit. By incinerating fifty grains of it at a red heat, washing what is left with distilled water, and again incinerating, a residue of peroxide of iron is obtained weighing about 15 grains.

Dose.—5 to 10 grains.

FICUS.

Fig.

The dried fruit of Ficus Carica, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iv. plate 228.

Characters.—The fig consists of the enlarged hollow succulent receptacle, bearing very numerous seed-like achenes on its inner surface. It is compressed, irregular in form, soft, tough, more or less translucent, brownish or yellowish, and covered with a saccharine efflorescence. Taste luscious; odour fruity and pleasant.

Preparation.—Confectio Sennæ, 12 parts in 75.

FILIX MAS.

Male Fern.

The rhizome with the persistent bases of the petioles of Aspidium Filix-mas, *Swartz*; *Moore and Lindl. Ferns* *of Great Britain*, plates 14–17. Collected late in the autumn, divested of its scales, roots, and all dead portions, and carefully dried with a gentle heat. Should not be used if more than a year old.

Characters.—From three to six or more inches in length, and the rhizome itself from three-quarters of an inch to an inch in diameter, but, being entirely covered by the hard persistent curved angular dark brown bases of the petioles, is apparently two or more inches; brown externally, yellowish-white or brownish internally. Odour feeble but disagreeable; taste sweetish and astringent at first, but subsequently bitter and nauseous.

Preparation.—Extractum Filicis Liquidum.

FŒNICULI FRUCTUS.

Fennel Fruit.

The dried fruit of cultivated plants of Fœniculum capillaceum, *Gilib.* (Fœniculum vulgare, *Gaert.*); *Bentl. and Trim. Med. Pl.* vol. ii. plate 123.

Characters.—From one-fifth to about two-fifths of an inch long, oblong or ovoid-oblong, more or less curved, capped by a conspicuous stylopod and two styles, smooth, greenish-brown or brown; odour aromatic; taste aromatic, sweet, and agreeable. The fruit is readily separated into its two mericarps, each of which has five prominent ridges of which the lateral are the broadest, and four vittæ in the grooves, and two on the commissure.

Preparations.

Aqua Fœniculi	1 pound to 1 gallon
Pulvis Glycyrrhizæ Compositus .	1 part in 12

GALBANUM.

Galbanum.

A gum-resin obtained from Ferula galbaniflua, *Boiss. and Buhse*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 128; Ferula rubricaulis, *Boiss.*; and probably other species.

Characters.—In tears or in masses of agglutinated tears. The tears are roundish or irregular in form, and vary in size from that of a lentil to a hazel nut, although rarely exceeding that of a pea; yellowish-brown, orange-brown, or yellowish-green; more or less translucent, usually rough and dirty on the surface, hard and brittle in cold weather, but softening in the summer, and by the heat of the hand becoming ductile and sticky. The masses, which commonly contain pieces of root, stem, and other impurities, are usually hard, compact, irregular in form, yellowish-brown, dark brownish-yellow, or rarely greenish. The odour is peculiar, aromatic, and not disagreeable; taste bitter, unpleasant, and somewhat alliaceous.

Preparations.

Emplastrum Galbani . . .	1 part in 11
Pilula Asafœtidæ Composita . .	1 part in 3½

GALLA.

Galls.

Excrescences on Quercus lusitanica, *Webb, var.* infectoria (Quercus infectoria, *Oliv.*), caused by the puncture and deposit of an egg or eggs of Cynips Gallæ tinctoriæ, *Oliv.*; *Steph. and Church. Med. Bot.* plate 152.

Characters.—Hard, heavy, subglobular, from half an inch to three-quarters of an inch or more in diameter, tuberculated on the surface, the tubercles and intervening spaces being smooth; dark bluish-green or dark olive-green externally, yellowish or brownish-white within, with a small central cavity. No odour; taste intensely astringent, followed by some degree of sweetness.

Preparations.

Acidum Gallicum	
„ Tannicum	
Tinctura Gallæ . . .	54½ grains to 1 fluid ounce
Unguentum Gallæ . .	80 grains to 1 ounce
„ „ cum Opio	80 grains to 1 ounce, nearly

GELSEMIUM.

Yellow Jasmine.

The dried rhizome and rootlets of Gelsemium nitidum, *Michaux* (Gelsemium sempervirens, *Aiton*); *Bentl. and Trim. Med. Pl.* vol. iii. plate 181.

Characters.—Nearly cylindrical, from half an inch to six inches or more in length, and commonly from a quarter to three-quarters of an inch in diameter, with small rootlets attached to, or mixed with, the larger pieces; light yellowish-brown externally, and marked longitudinally by dark purplish lines; fracture splintery; bark thin, presenting silky fibres in its liber, and closely attached to a pale yellow porous woody axis, with evident medullary rays, and with or without pith. Odour somewhat narcotic and aromatic; taste bitter.

Dose.—5 to 30 grains.

Preparations.

Extractum Gelsemii Alcoholicum | Tinctura Gelsemii

GENTIANÆ RADIX.

Gentian Root.

The dried root of Gentiana lutea, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iii. plate 182.

Characters and Test.—In more or less cylindrical pieces or longitudinal slices, from a few inches to a foot or more in length, and from half an inch to about an inch thick; wrinkled in an annular manner when the pieces have been derived from the upper part of the root, and all marked with irregular longitudinal furrows; deep yellowish-brown externally, yellowish or reddish-yellow within; tough and brittle when dry. Bark thick, reddish, and separated from the central woody portion, which is somewhat spongy, by a dark-coloured cambium zone. Odour heavy and peculiar; taste at first sweetish, but ultimately very bitter. An infusion when cool is not coloured blue by solution of iodine.

Preparations.

Extractum Gentianæ	
Infusum Gentianæ Compositum .	110 grains to 1 pint
Tinctura Gentianæ Composita .	1½ ounce to 1 pint

GLYCERINUM.

Glycerine.

A sweet principle, $C_3H_5(HO)_3$, obtained by reaction of fats and fixed oils with aqueous fluids, and containing a small percentage of water.

Characters.—A clear colourless fluid, oily to the touch, without odour, of a sweet taste; freely soluble in water and in alcohol. When decomposed by heat it evolves intensely irritating vapours. Specific gravity about 1·25. Its solution is not affected by nitrate of silver, sulphydrate of ammonium, oxalate of ammonium, or chloride of barium, and does not alter the colour of moistened blue or red litmus paper. Shaken with an equal volume of sulphuric acid, no coloration, or only a very slight straw coloration, should result. When gently heated with diluted sulphuric acid, no rancid odour is produced.

Dose.—1 to 2 drachms.

Preparations.

Extractum Cinchonæ Liquid.
Glycerinum Acidi Carbolici
,, ,, Gallici
,, ,, Tannici
,, Aluminis
,, Amyli
,, Boracis
,, Plumbi Subacet.
,, Tragacanthæ
Lamellæ, in all
Linimentum Iodi
,, Potassii Iodidi cum Sapone
Mel Boracis
Pilula Aloes et Myrrhæ
,, Rhei Composita
,, Saponis Composita
Tinctura Kino
Unguentum Iodi

GLYCERINUM ACIDI CARBOLICI.

Glycerine of Carbolic Acid.

Take of

Carbolic Acid .	1 ounce	or ..	1 part
Glycerine . .	4 fluid ounces ..	,, ..	4 fluid parts

Rub them together in a mortar until the acid is dissolved; or the mixture may be warmed.

GLYCERINUM ACIDI GALLICI.

Glycerine of Gallic Acid.

Take of

Gallic Acid . .	1 ounce	or ..	1 part
Glycerine . .	4 fluid ounces ..	,, ..	4 fluid parts

Stir them together in a porcelain dish, and apply a temperature not exceeding that of a water-bath until complete solution is effected.

GLYCERINUM ACIDI TANNICI.

Glycerine of Tannic Acid.

Take of

Tannic Acid .	1 ounce	or ..	1 part
Glycerine . .	4 fluid ounces ..	,, ..	4 fluid parts

Stir them together in a porcelain dish, and apply a temperature not exceeding that of a water-bath until complete solution is effected.

GLYCERINUM ALUMINIS.

Take of

Alum, in powder	1 ounce	or . .	1 part
Glycerine . .	5 fluid ounces . .	,, . .	5 fluid parts

Stir them together in a porcelain dish, gently applying heat until solution is effected. Set aside; and pour off the clear fluid from any deposited matter.

GLYCERINUM AMYLI.

Glycerine of Starch.

Take of

Starch . .	1 ounce	or . .	1 part
Glycerine . .	5 fluid ounces . .	,, . .	5 fluid parts
Distilled Water .	3 fluid ounces . .	,, . .	3 fluid parts

Stir them together in a porcelain dish, and apply heat, stirring constantly, until the starch particles are completely broken and a translucent jelly is formed.

Preparations in which Glycerinum Amyli is used.

Suppositoria Acidi Carbolici cum Sapone
,, ,, Tannici ,, ,,
,, Morphinæ cum Sapone

GLYCERINUM BORACIS.

Glycerine of Borax.

Take of

Borax, in powder	1 ounce	or . .	1 part
Glycerine . .	4 fluid ounces . .	,, . .	4 fluid parts
Distilled Water .	2 fluid ounces . .	,, . .	2 fluid parts

Rub them together in a mortar until the borax is dissolved; or heat gently until solution is effected.

GLYCERINUM PLUMBI SUBACETATIS.

Glycerine of Subacetate of Lead.

Take of

Acetate of Lead	5 ounces
Oxide of Lead, in powder	3½ ounces
Glycerine	1 pint
Distilled Water	12 fluid ounces

Mix together and boil for a quarter of an hour; then filter and evaporate until the water is dissipated.

Preparation.—Unguentum Glycerini Plumbi Subacetatis.

GLYCERINUM TRAGACANTHÆ.

Glycerine of Tragacanth.

Take of

Tragacanth, in powder	110 grains	or	3 parts
Glycerine	1 fluid ounce	,,	12 fluid parts
Distilled Water	74 fluid grains	,,	2 fluid parts

Mix the tragacanth with the glycerine in a mortar, add the water, and rub until a translucent homogeneous jelly is produced.

GLYCYRRHIZÆ RADIX.

Liquorice Root.

The root and subterranean stems or stolons, fresh and dried, of Glycyrrhiza glabra, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 74.

Characters.—When fresh in long cylindrical pieces of varying thickness, smooth and yellowish-brown or somewhat reddish externally, yellow and juicy internally, very flexible, easily cut, and consisting of a thick cortical portion surrounding a central woody axis, which in the case of the stem contains a small pith. Odour peculiar, earthy, and somewhat sickly; taste strong, peculiar, sweet. When dried it is either peeled or unpeeled. In the latter case it has essentially the same characters as the fresh root, except that it is somewhat darker, furrowed longitudinally, and has a slightly acrid and, in some cases, a feebly bitter taste combined with the characteristic sweetness; but when peeled it has a yellow colour externally, and there is no acridity.

Preparations.

Confectio Terebinthinæ . .	1 part in 4, nearly
Decoctum Sarsæ Compositum .	¼ ounce to 1 pint
Extractum Glycyrrhizæ	
,, ,, Liquidum	
Infusum Lini	100 grains to 1 pint
Pilula Hydrargyri . . .	1 part in 6
,, Ferri Iodidi . . .	1 part in 2¾, nearly
Pulvis Glycyrrhizæ Compositus	

GOSSYPIUM.

Cotton Wool.

Synonym.—Cotton.

The hairs of the seed of Gossypium barbadense, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. i. plate 37; and of other species of Gossypium, from which fatty matter and all foreign impurities have been removed.

Characters and Tests.—In white soft filaments, each consisting of an elongated tubular cell, and when examined under the microscope appearing as a flattened twisted band with slightly thickened rounded edges; inodorous and tasteless. It should readily be wetted by water, to which it should not communicate either an alkaline or acid reaction. On ignition in air it burns, leaving less than one per cent. of ash.

Preparation for which Cotton Wool is used.—Pyroxylin.

GRANATI RADICIS CORTEX.

Pomegranate Root Bark.

The dried bark of the root of Punica Granatum, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 113.

Characters and Test.—In small quills or fragments, varying from two to four inches in length; outer surface yellowish-grey, wrinkled or cracked with faint longitudinal striæ, or more or less furrowed with corky bands; inner surface smooth or nearly so, yellow; fracture short; no odour; taste astringent and very feebly bitter. An infusion becomes deep blackish-blue on the addition of a persalt of iron.

Preparation.—Decoctum Granati Radicis, 2 ounces to 1 pint.

GUAIACI LIGNUM.

Guaiacum Wood.

The heart-wood of Guaiacum officinale, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. i. plate 41; or of Guaia-
cum sanctur *Linn.* For use in pharmacy the wood,
as us HEM be deprived of its sap-
wo Hemidesmus ed to the form of chips,
ra The dried root of Hemidesmu
Plant. Ind. Orient. vol. ii chips, raspings, or shavings,
as s *racters.*—In cylindrica e dark greenish-brown; their
taste, furrowed pieces, six rt time. is acrid and somewhat
aromatic, yellowish-brown, when rubbed, and more especially
when heated d from the o faintly aromatic. When touched
with nitric acid, cracked e a temporary bluish-green colour;
and if moderately hea n a solution of perchloride of mer-
cury, a bluish-green colour is also produced.

Preparation.

Decoctum Sarsæ Compositum . ¼ ounce to 1 pint

GUAIACI RESINA.
Guaiacum Resin.

The resin obtained from the stem of Guaiacum officinale, *Linn.*, or of Guaiacum sanctum, *Linn.*, by natural exudation, by incision, or by heat.

Characters and Test.—In roundish or somewhat oval tears, or more commonly in large masses containing fragments of bark, wood, and other impurities; brownish or greenish-brown externally, and, when the surface has been rubbed and exposed to air and light, covered with a green powder. It is brittle, breaking with a clean glassy fracture; thin splinters are transparent and greenish-brown; powder greyish, but by exposure becoming green. Odour somewhat balsamic; and when chewed leaving an acrid sensation in the throat. A solution in rectified spirit strikes a clear blue colour when applied to the inner surface of a paring of raw potato.

Dose.—10 to 30 grains.

Preparations.

Mistura Guaiaci . . . 11 grains in 1 fluid ounce
Pilula Hydrargyri Subchloridi Composita . . . 1 part
Tinctura Guaiaci Ammo d of Gossypium barbadense
Med. Pl. vol. i. plate 37; an
um, from which fatty matt
ve been removed.

GUTTA
Gutta

te soft filaments, ea

The concrete juice of Dic and when exam Isonandra Gutta, *Hook.*); *Bentl. and Trin* tened twiste vol. iii. plate 167; and of several other tre inodor e natural order Sapotaceæ.

Characters.—In pieces of a light-brown or chocolate colour, tough, somewhat flexible, plastic above 120° F. (48°·8 C.), insoluble in water, alcohol, alkaline solutions, or dilute acids; but almost entirely soluble in chloroform, and entirely so in oil of turpentine, carbon disulphide, or benzol.

Preparation.—Liquor Gutta Percha.

HÆMATOXYLI LIGNUM.

Logwood.

The sliced heart-wood of Hæmatoxylon campechianum, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 86.

Characters.—The logs, in which form it is imported, are hard, heavy, blackish-red externally, and internally reddish-brown. The chips as directed to be used have a reddish-brown colour, a slight peculiar agreeable odour, and a sweetish astringent taste. When chewed they colour the saliva a brilliant dark reddish-pink colour.

Preparations.

Decoctum Hæmatoxyli . .	1 ounce to 1 pint
Extractum Hæmatoxyli	

HEMIDESMI RADIX.

Hemidesmus Root.

The dried root of Hemidesmus indicus, *R. Br.*; *Wight, Icon. Plant. Ind. Orient.* vol. ii. plate 594.

Characters.—In cylindrical, more or less twisted, longitudinally furrowed pieces, six inches or more in length; covered by a thin yellowish-brown or brown corky layer, which is easily separated from the other portion of the bark, the latter being frequently cracked in an annular manner. Odour fragrant, resembling that of melilot or Tonquin bean; taste sweetish and very slightly acrid.

Preparation.

Syrupus Hemidesmi . .	1 ounce to 10½ ounces

HIRUDO.

The Leech.

1. Sanguisuga medicinalis, *Savigny*, the Speckled Leech; and 2. S. officinalis, *Sav.*, the Green Leech.

Characters.—Body soft, smooth, two or more inches long, tapering to each end, plano-convex, wrinkled transversely; back olive-green with six rusty-red longitudinal stripes. 1. Belly greenish-yellow, spotted with black; 2. Belly olive-green, not spotted.

HORDEUM DECORTICATUM.

Pearl Barley.

The dried seed of Hordeum distichon, *Linn*; *Bentl. and Trim. Med. Pl.* vol. iv. plate 293; divested of its integuments. From plants cultivated in Britain.

Characters.—White, rounded, with a trace of the longitudinal furrow, in which are the remains of the yellowish-brown integuments. Taste and odour farinaceous like the cereal grains generally.

Preparation.—Decoctum Hordei.

HYDRARGYRI IODIDUM RUBRUM.

Red Iodide of Mercury.

Synonyms.—**Hydrargyri Biniodidum; Mercuric Iodide.**

HgI_2.

Take of

Perchloride of Mercury	4 ounces
Iodide of Potassium	5 ounces
Boiling Distilled Water	4 pints

Dissolve the perchloride of mercury in three pints, and the iodide of potassium in the remainder of the water, and mix the solutions. When the temperature of the mixture has fallen to that of the atmosphere, decant the supernatant liquor from the precipitate, and, having collected the latter on a filter, wash it twice with cold distilled water, and dry it at a temperature not exceeding 212° F. (100° C.)

Characters and Tests.—A crystalline powder of a vermilion colour, becoming yellow when gently heated over a lamp on a sheet of paper; almost insoluble in water, dissolves sparingly in alcohol, but freely in ether, or in an aqueous solution of iodide of potassium. When digested with solution of soda it assumes a reddish-brown colour, and the fluid cleared by filtration and mixed with solution of starch gives a blue precipitate on being acidulated with nitric acid. Entirely volatilised at a temperature under redness.

Dose.—$\frac{1}{32}$ to $\frac{1}{8}$ grain.

Preparations.

Liquor Arsenii et Hydrargyri Iodidi .	about 1 grain in 100
Unguentum Hydrargyri Iodidi Rubri .	1 part in 28

HYDRARGYRI OXIDUM FLAVUM.

Yellow Oxide of Mercury.

Synonym.- Yellow Mercuric Oxide.

HgO.

Take of

Perchloride of Mercury . . .	4 ounces
Solution of Soda	2 pints
Distilled Water	a sufficiency

Dissolve the perchloride of mercury in four pints of distilled water, aiding the solution by the application of heat, and add this to the solution of soda. Stir them together; allow the yellow precipitate to subside; remove the supernatant liquor by decantation; thoroughly wash the precipitated oxide on a calico filter with distilled water; and finally dry it by the heat of a water-bath.

Characters and Tests.—A yellow powder readily dissolved by hydrochloric acid, yielding a solution which, with solution of ammonia, gives a white precipitate. It is entirely volatilised when heated to incipient redness, being resolved into oxygen gas and the vapour of mercury.

Preparation for which Yellow Oxide of Mercury is used.

Oleatum Hydrargyri

HYDRARGYRI OXIDUM RUBRUM.

Red Oxide of Mercury.

Synonyms.—**Hydrargyri Nitrico-oxidum; Red Mercuric Oxide.**

HgO.

Take of

Mercury, by weight . . .	8 ounces
Nitric Acid	4½ fluid ounces
Water	2 fluid ounces

Dissolve half the mercury in the nitric acid diluted with the water, evaporate the solution to dryness, and with the dry salt thus obtained triturate the remainder of the mercury until the two are uniformly blended together. Heat the mixture in a porcelain dish, with repeated stirring, until acid vapours cease to be evolved.

Characters and Tests.—An orange-red powder readily dissolved by hydrochloric acid, yielding a solution which, with solution of potash added in excess, gives a yellow precipitate, and with solution of ammonia a white precipitate. Entirely volatilised at a temperature under redness, being at the same time decomposed into mercury and oxygen. Even if this be done in a test-tube, no orange vapours are perceived.

Preparation.

Unguentum Hydrargyri Oxidi Rubri .	1 part in 8

HYDRARGYRI PERCHLORIDUM.

Perchloride of Mercury.

Synonyms.—**Hydrargyrum Corrosivum Sublimatum; Hydrargyri Bichloridum; Corrosive Sublimate; Mercuric Chloride.**

$HgCl_2$.

Take of

Persulphate of Mercury	20 ounces
Chloride of Sodium, dried . . .	16 ounces
Black Oxide of Manganese, in fine powder	1 ounce

Reduce the persulphate of mercury and the chloride of sodium each to fine powder, and having mixed them and the oxide of manganese thoroughly by trituration in a mortar, put the mixture into an apparatus adapted for sublimation, and apply sufficient heat to cause vapours of perchloride of mercury to rise into the less heated part of the apparatus which has been arranged for their condensation.

Characters and Tests.—In heavy colourless masses of prismatic crystals, possessing a highly acrid metallic taste; more soluble in alcohol, and still more so in ether, than in water. Its aqueous solution gives a yellow precipitate with caustic potash, a white precipitate with ammonia, and a curdy white precipitate with nitrate of silver. When heated it sublimes without decomposing, or leaving any residue.

Dose.—$\frac{1}{16}$ to $\frac{1}{8}$ grain.

Preparations for which Perchloride of Mercury is used.

Hydrargyri Iodidum Rubrum	
Hydrargyrum Ammoniatum	
Liquor Hydrargyri Perchloridi	$\frac{1}{2}$ grain to 1 fluid ounce
Lotio Hydrargyri Flava . .	18 grains to 10 fluid ounces

HYDRARGYRI PERSULPHAS.

Persulphate of Mercury.

Synonyms.—Hydrargyri Sulphas; Sulphate of Mercury; Mercuric Sulphate.

$HgSO_4$.

Take of

Mercury, by weight . . .	20 ounces
Sulphuric Acid	12 fluid ounces

Heat the mercury with the sulphuric acid in a porcelain vessel, stirring constantly until the metal disappears, then continue the heat until a dry white salt remains.

Characters.—A white crystalline heavy powder, rendered yellow by affusion of water. Entirely volatilised by heat.

Preparations for which Persulphate of Mercury is used.

Hydrargyri Perchloridum | Hydrargyri Subchloridum

HYDRARGYRI SUBCHLORIDUM.

Subchloride of Mercury.

Synonyms.—**Calomelas; Hydrargyri Chloridum; Calomel; Mercurous Chloride.**

HgCl.

Take of

Persulphate of Mercury . . .	10 ounces
Mercury	7 ounces
Chloride of Sodium, dried . . .	5 ounces
Boiling Distilled Water . . .	a sufficiency

Moisten the persulphate of mercury with some of the water, and rub it and the mercury together until globules are no longer visible; add the chloride of sodium and thoroughly mix the whole by continued trituration. Sublime by a suitable apparatus into a chamber of such size that the calomel, instead of adhering to its sides as a crystalline crust, shall fall as a fine powder on its floor. Wash this powder with boiling distilled water until the washings cease to be darkened by a drop of sulphydrate of ammonium. Finally, dry at a temperature not exceeding 212° F. (100° C.)

Characters and Tests.—A dull-white heavy and nearly tasteless powder, sometimes rendered yellowish by trituration in a mortar; insoluble in water, spirit, or ether. Digested with solution of potash it becomes black; and the clear solution, acidulated with nitric acid, gives a copious white precipitate with nitrate of silver. Contact with hydrocyanic acid also darkens its colour. When sufficiently heated it is entirely volatilised. Warm ether which has been shaken with it in a bottle leaves, on evaporation, no residue.

Dose.—½ grain to 5 grains.

Preparations in which Subchloride of Mercury is used.

Lotio Hydrargyri Nigra . . .	8 grains to 1 fluid ounce
Pilula Hydrargyri Subchloridi Composita	1 part in 5
Unguentum Hydrargyri Subchloridi .	1 part in 6½, nearly

HYDRARGYRUM.

Mercury.

Characters and Tests.—A metal, fluid at common temperatures, brilliantly lustrous, and easily divisible into spherical globules. Volatilises at a temperature below that of visible redness, leaving no residue.

Preparations containing Mercury chiefly uncombined.

Hydrargyrum cum Creta	1 part in 3
Emplastrum Ammoniaci cum Hydrargyro	1 ,, in 5
,, Hydrargyri	1 ,, in 3
Linimentum Hydrargyri	1 ,, in 6
Pilula Hydrargyri	1 ,, in 3
Suppositoria Hydrargyri	1 ,, in 6
Unguentum Hydrargyri	1 ,, in 2
,, ,, Compositum	1 ,, in 4½

Preparations containing combined Mercury.

Arsenii et Hydrargyri Iodidi, Liquor
Hydrargyri Iodidum Rubrum
,, Lotio Flava
,, ,, Nigra
,, Nitratis Liquor Acidus
,, Oxidum Flavum
,, ,, Rubrum
,, Perchloridi Liquor
,, Perchloridum
,, Persulphas
,, Subchloridum
Hydrargyrum Ammoniatum
Oleatum Hydrargyri
Pilula Hydrargyri Subchloridi Composita
Unguentum Hydrargyri Ammoniati
,, ,, Iodidi Rubri
,, ,, Nitratis
,, ,, Oxidi Rubri
,, ,, Subchloridi

HYDRARGYRUM AMMONIATUM.

Ammoniated Mercury.

Synonyms.—**Hydrargyri Ammonio-chloridum; Hydrargyri Præcipitatum Album; Chloride of Mercuric-ammonium.**

NH_2HgCl.

Take of

Perchloride of Mercury . . .	3 ounces
Solution of Ammonia . . .	4 fluid ounces
Distilled Water	3 pints

Dissolve the perchloride of mercury in three pints of the distilled water with the aid of heat; pour the solution into the ammonia diluted with one pint of the water, constantly stirring; collect the precipitate on a filter, and wash it well with cold distilled water until the liquid which passes through ceases to give a precipitate when dropped into a solution of nitrate of silver acidulated with nitric acid. Lastly dry the product at a temperature not exceeding 212° F. (100° C.)

Characters and Tests.—An opaque white powder on which water has but little, and alcohol or ether no action. Digested with caustic potash, it evolves ammonia, acquiring a pale yellow colour, and the fluid, filtered and acidulated with nitric acid, gives a white precipitate with nitrate of silver. Boiled with a solution of stannous chloride it becomes grey, and affords globules of metallic mercury. Entirely volatilised at a temperature under redness, without fusing. It should yield 77·5 per cent. of metallic mercury.

Preparation.

Unguentum Hydrargyri Ammoniati .	1 part in 8

HYDRARGYRUM CUM CRETA.

Mercury with Chalk.

Take of

Mercury, by weight	1 ounce
Prepared Chalk	2 ounces

Rub the mercury and chalk in a porcelain mortar until metallic globules cease to be visible to the naked eye, and the mixture acquires a uniform grey colour.

Characters and Tests.—A powder of a light-grey colour; free from grittiness; insoluble in water; partly dissolved by diluted hydrochloric acid, leaving the mercury in a finely-divided state. The solution formed with hydrochloric acid is not precipitated by the addition of stannous chloride.

Dose.—3 to 8 grains.

HYOSCYAMI FOLIA.

Henbane Leaves.

The fresh leaves and flowers, with the branches to which they are attached, of Hyoscyamus niger, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iii. plate 194; also the leaves separated from the branches, and flowering tops, carefully dried. Collected from biennial plants, growing wild or cultivated in Britain, when about two-thirds of the flowers are expanded.

Characters and Test.—Leaves varying in length, sometimes as much as ten inches, with or without a stalk, alternate, exstipulate, triangular-ovate or ovate-oblong, acute, undulated, irregularly toothed, sinuated, or pinnatifid, pale green, and glandular-hairy, particularly on their under surface. The branches are sub-cylindrical, and also glandular-hairy. The fresh herb has a strong heavy odour, a bitter and slightly acrid taste, and the juice when dropped into the eye dilates the pupil.

Preparations.

Extractum Hyoscyami	
Succus Hyoscyami	
Tinctura Hyoscyami . .	2½ ounces to 1 pint

INFUSUM ANTHEMIDIS.

Infusion of Chamomile.

Take of

Chamomile Flowers	½ ounce	or	1 part
Boiling Distilled Water	10 fl. ounces	,,	20 fl. parts

Infuse in a covered vessel for fifteen minutes, and strain.

Dose.—1 to 4 fluid ounces.

INFUSUM AURANTII.

Infusion of Orange Peel.

Take of

Bitter-Orange Peel, cut small	½ oz.	or	1 part
Boiling Distilled Water	10 fl. ozs.	,,	20 fl. parts

Infuse in a covered vessel for fifteen minutes, and strain.

Dose.—1 to 2 fluid ounces.

INFUSUM AURANTII COMPOSITUM.

Compound Infusion of Orange Peel.

Take of

Bitter-Orange Peel, cut small	¼ ounce	or	4 parts
Fresh Lemon Peel, cut small	56 grains	,,	2 parts
Cloves, bruised	28 grains	,,	1 part
Boiling Distilled Water	10 fl. ozs.	,,	160 fl. parts

Infuse in a covered vessel for fifteen minutes, and strain.

Dose.—1 to 2 fluid ounces.

INFUSUM BUCHU.

Infusion of Buchu.

Take of

Buchu Leaves, bruised	½ ounce	or	1 part
Boiling Distilled Water	10 fl. ounces	,,	20 fl. parts

Infuse in a covered vessel for half an hour, and strain.

Dose.—1 to 4 fluid ounces.

INFUSUM CALUMBÆ.

Infusion of Calumba.

Take of

Calumba Root, cut small.	½ ounce	or	1 part
Cold Distilled Water	10 fl. ounces	,,	20 fl. parts

Macerate in a covered vessel for half an hour, and strain.

Dose.—1 to 2 fluid ounces.

INFUSUM CARYOPHYLLI.

Infusion of Cloves.

Take of

Cloves, bruised	¼ ounce	or	1 part
Boiling Distilled Water.	10 fl. ounces	,,	40 fl. parts

Infuse in a covered vessel for half an hour, and strain.

Dose.—1 to 4 fluid ounces.

INFUSUM CASCARILLÆ.

Infusion of Cascarilla.

Take of

Cascarilla Bark, in No. 20 powder.	1 ounce	or	1 part
Boiling Distilled Water.	10 fl. ounces	,,	10 fl. parts

Infuse in a covered vessel for half an hour, and strain.

Dose.—1 to 2 fluid ounces.

INFUSUM CATECHU.

Infusion of Catechu.

Take of

Catechu, in coarse powder	160 grains	or	5·3 parts
Cinnamon Bark, bruised	30 grains	,,	1 part
Boiling Distilled Water.	10 fl. ounces	,,	149 fl. parts

Infuse in a covered vessel for half an hour, and strain.

Dose.—1 to 2 fluid ounces.

Infusion of Chiretta.

Take of

Chiretta, cut small .	¼ ounce	or . .	1 part
Distilled Water, at 120° F. (48°·9 C.) . .	10 fl. ounces . .	,, . .	40 fl. parts

Infuse in a covered vessel for half an hour, and strain.

Dose.—1 to 2 fluid ounces.

INFUSUM CINCHONÆ ACIDUM.

Acid Infusion of Cinchona.

Synonym.—Infusum Cinchonæ.

Take of

Red Cinchona Bark, in No. 40 powder . .	½ ounce . . .	or . .	1 part
Aromatic Sulphuric Acid	1 fl. drachm .	,, . .	¼ fl. part
Boiling Distilled Water .	10 fl. ounces .	,, . .	20 fl. parts

Infuse in a covered vessel for one hour, and strain.

Dose.—1 to 2 fluid ounces.

INFUSUM CUSPARIÆ.

Infusion of Cusparia.

Take of

Cusparia Bark, in No. 40 powder . . .	½ ounce	or . .	1 part
Distilled Water, at 120° F. (48°·9 C.) . .	10 fl. ounces . .	,, . .	20 fl. parts

Infuse in a covered vessel for one hour, and strain.

Dose.—1 to 2 fluid ounces.

INFUSUM CUSSO.

Infusion of Kousso.

Take of

Kousso, in coarse powder	½ ounce	or . .	1 part
Boiling Distilled Water .	8 fl. ounces . . .	,, . .	16 fl. parts

Infuse in a covered vessel for fifteen minutes. Not to be strained.

Dose.—4 to 8 fluid ounces.

INFUSUM DIGITALIS.

Infusion of Foxglove.

Take of

Foxglove Leaves, dried .	28 grains . . .	or . .	1 part
Boiling Distilled Water .	10 fl. ounces .	,, . .	156 fl. parts

Infuse in a covered vessel for fifteen minutes, and strain.

Dose.—2 to 4 fluid drachms.

INFUSUM ERGOTÆ.

Infusion of Ergot.

Take of

Ergot, crushed . .	¼ ounce	or . .	1 part
Boiling Distilled Water .	10 fl. ounces . .	,, . .	40 fl. parts

Infuse in a covered vessel for half an hour, and strain.

Dose.—1 to 2 fluid ounces.

INFUSUM GENTIANÆ COMPOSITUM.

Compound Infusion of Gentian.

Take of

Gentian Root, sliced Bitter-Orange Peel, cut small	of each	55 grains . . or	. 1 part
Fresh Lemon Peel, cut small		¼ ounce . . ,,	. 2 parts
Boiling Distilled Water .		10 fl. ozs. . ,,	. 80 fl. parts

Infuse in a covered vessel for half an hour, and strain.

Dose.—1 to 2 fluid ounces.

INFUSUM JABORANDI.

Infusion of Jaborandi.

Take of

Jaborandi, cut small .	½ ounce . . . . . or	. . 1 part
Boiling Distilled Water	10 fluid ounces . ,,	. . 20 fluid parts

Infuse in a covered vessel for half an hour, and strain.

Dose.—1 to 2 fluid ounces.

INFUSUM KRAMERIÆ.

Infusion of Rhatany.

Take of

Rhatany Root, in No. 40 powder . .	½ ounce . . . . . or	. . 1 part
Boiling Distilled Water .	10 fl ounces . . ,,	. . 20 fl. parts

Infuse in a covered vessel for half an hour, and strain,

Dose.—1 to 2 fluid ounces.

INFUSUM LINI.

Infusion of Linseed.

Take of

Linseed	150 grains	. . or . .	3 parts
Dried Liquorice Root, in No. 20 powder . .	50 grains	. . . ,, . .	1 part
Boiling Distilled Water .	10 fl. ounces	. . ,, . .	87½ fl. parts

Infuse in a covered vessel for two hours, and strain.

INFUSUM LUPULI.

Infusion of Hop.

Take of

Hop	½ ounce	. . . . . or . .	1 part
Boiling Distilled Water .	10 fl. ounces	. . ,, . .	20 fl. parts

Infuse in a covered vessel for one hour, and strain.

Dose.—1 to 2 fluid ounces.

INFUSUM MATICÆ.

Infusion of Matico.

Take of

Matico Leaves, cut small	½ ounce	. . . . . or . .	1 part
Boiling Distilled Water .	10 fl. ounces	. . ,, . .	20 fl. parts

Infuse in a covered vessel for half an hour, and strain.

Dose.—1 to 4 fluid ounces.

INFUSUM QUASSIÆ.

Infusion of Quassia.

Take of

Quassia Wood, in chips .	55 grains	. . . . or . .	1 part
Cold Distilled Water .	10 fl. ounces	. . ,, . .	80 fl. parts

Macerate in a covered vessel for half an hour, and strain.

Dose.—1 to 2 fluid ounces.

INFUSUM RHEI.

Infusion of Rhubarb.

Take of

Rhubarb Root, in thin slices . . .	¼ ounce	or . .	1 part
Boiling Distilled Water .	10 fl. ounces . .	,, . .	40 fl. parts

Infuse in a covered vessel for half an hour, and strain.

Dose.—1 to 2 fluid ounces.

INFUSUM ROSÆ ACIDUM.

Acid Infusion of Roses.

Take of

Dried Red Rose Petals, broken up . . .	¼ ounce	or . .	2 parts
Diluted Sulphuric Acid .	1 fl. drachm . .	,, . .	1 fl. part
Boiling Distilled Water .	10 fl. ounces . .	,, . .	80 fl. parts

Add the acid to the water, infuse the petals in the mixture in a covered vessel for half an hour, and strain.

Dose.—1 to 2 fluid ounces.

INFUSUM SENEGÆ.

Infusion of Senega.

Take of

Senega Root, in No. 20 powder . . .	½ ounce	or . .	1 fl. part
Boiling Distilled Water .	10 fl. ounces . .	,, . .	20 fl. parts

Infuse in a covered vessel for half an hour, and strain.

Dose.—1 to 2 fluid ounces.

INFUSUM SENNÆ.

Infusion of Senna.

Take of

Senna	1 ounce	or	2 parts
Ginger, sliced	28 grains	,,	⅛ part
Boiling Distilled Water	10 fl. ounces	,,	20 fl. parts

Infuse in a covered vessel for half an hour, and strain.

Dose.—1 to 2 fluid ounces.

Preparation.—Mistura Sennæ Composita.

INFUSUM SERPENTARIÆ.

Infusion of Serpentary.

Take of

Serpentary Root, in No. 20 powder	¼ ounce	or	1 part
Boiling Distilled Water	10 fl. ounces	,,	40 fl. parts

Infuse in a covered vessel for half an hour, and strain.

Dose.—1 to 2 fluid ounces.

INFUSUM UVÆ URSI.

Infusion of Bearberry.

Take of

Bearberry Leaves, bruised	½ ounce	or	1 part
Boiling Distilled Water	10 fl. ounces	,,	20 fl. parts

Infuse in a covered vessel for one hour, and strain.

Dose.—1 to 2 fluid ounces.

INFUSUM VALERIANÆ.

Infusion of Valerian.

Take of

Valerian Rhizome, bruised	¼ ounce	or	1 part
Boiling Distilled Water	10 fl. ounces	,,	40 fl. parts

Infuse in a covered vessel for one hour, and strain.

Dose.—1 to 2 fluid ounces.

INJECTIO APOMORPHINÆ HYPODERMICA.

Hypodermic Injection of Apomorphine.

Take of

Hydrochlorate of Apomorphine	2 grains
Camphor Water	100 minims

Dissolve and filter. The solution should be made as required for use.

Dose, by subcutaneous injection.—2 to 8 minims.

INJECTIO ERGOTINI HYPODERMICA.

Hypodermic Injection of Ergotin.

Take of

Ergotin	100 grains	or	1 part
Camphor Water	200 fluid grains	,,	2 fluid parts

Dissolve by stirring them together. The solution should be made as required for use.

Dose, by subcutaneous injection.—3 to 10 minims.

INJECTIO MORPHINÆ HYPODERMICA.

Hypodermic Injection of Morphine.

A solution of acetate of morphine containing one grain of the acetate in ten minims of the injection.[1]

Take of

Hydrochlorate of Morphine		92 grains
Solution of Ammonia	of each	a sufficiency
Acetic Acid		
Distilled Water		

Dissolve the hydrochlorate of morphine in two ounces of distilled water, aiding the solution by gently heating; then add solution of ammonia so as to precipitate the morphine, and render the liquid slightly alkaline; allow it to cool; collect the precipitate on a filter, wash it with distilled water, and allow it to drain; then transfer the morphine to a small porcelain dish with about an ounce of distilled water, apply heat gently, and carefully add acetic acid until the morphine is dissolved, and a very slightly acid solution is formed. Add now sufficient distilled water to make the solution measure exactly two fluid ounces. Filter and preserve the product in a stoppered bottle excluded from the light.

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[1] It contained 1 grain in 12 minims in B. P. Additions, 1874.

Characters and Tests.—A clear solution free from any solid particles. Very slightly acid to test paper. A fluid drachm of it rendered slightly alkaline by the addition of solution of ammonia, yields a precipitate of morphine which, after being washed and dried, should weigh 4·25 grains, corresponding to six grains of acetate of morphine.

Dose, by subcutaneous injection.—1 to 5 minims.

IODOFORMUM.

Iodoform.

CH_3I.

A product of the action of iodine on a mixture of alcohol and solution of carbonate of potassium.

Characters and Tests.—Shining, lemon-yellow, crystalline scales; somewhat greasy to the touch; having a persistent and disagreeable odour and flavour. Very slightly soluble in cold water, more soluble in rectified spirit, soluble in chloroform or ether, readily and entirely soluble in warm ether; the solutions being neutral to litmus paper. When heated it first melts to a brown liquid, then gives off brown and violet vapours, leaving a black residue which entirely disappears on continued ignition. Warmed with an alcoholic solution of potash and the resulting fluid acidified by nitric acid, iodine is liberated, the mixture acquiring a brown colour or, when cold, a blue colour on the addition of mucilage of starch.

Preparations.

Suppositoria Iodoformi .	3 grains in each suppository
Unguentum Iodoformi .	1 part in 10

Dose.—½ to 3 grains.

IODUM.

Iodine.

A non-metallic element obtained from the ashes of sea-weeds and from mineral iodides and iodates.

Characters and Tests.—In laminar crystals, of a peculiar odour, dark colour, and metallic lustre, which, when heated, yield a beautiful violet-coloured vapour; very sparingly soluble in water, but freely dissolved by alcohol, by ether, and by a solution of iodide of potassium. The aqueous solution strikes a deep-blue colour with starch. It sublimes without leaving any residue, and the portion that first comes over does not include any slender colourless prisms emitting a pungent odour. 12·7 grains dissolved in an ounce of water containing fifteen grains of iodide of potassium, requires for complete decoloration 1000 grain-measures of the volumetric solution of hyposulphite of sodium.

Preparations containing Iodine.

Arsenii Iodidum
Hydrargyri Iodidum Rubrum
Iodoformum
Linimentum Iodi
,, Potassii Iodidi cum Sapone
Liquor Iodi
Pilula Ferri Iodidi
Potassii Iodidum
Sodii Iodidum
Sulphuris Iodidum
Syrupus Ferri Iodidi
Tinctura Iodi
Unguentum Iodi
,, Iodoformi
,, Plumbi Iodidi
,, Sulphuris Iodidi
Vapor Iodi

IPECACUANHA.

Ipecacuanha.

The dried root of Cephaëlis Ipecacuanha, *A. Rich.*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 145.

Characters.—In more or less twisted pieces, usually from two to four inches long, and about the size of a small writing quill. It consists of two parts, namely, a central inert whitish woody axis, and a thick cortical or active portion, which is brownish, greyish-brown, or reddish-brown, irregularly annulated, and having a resinous or waxy fracture. Taste somewhat acrid and bitter; odour slight and peculiar, more especially when powdered.

Dose.—As an expectorant, $\frac{1}{2}$ to 2 grains; as an emetic, 15 to 30 grains.

Preparations.

Pilula Conii Composita . .	1 part in 6, nearly
,, Ipecacuanhæ cum Scilla .	1 part in 23, about
Pulvis Ipecacuanhæ Compositus .	1 part in 10
Trochisci Ipecacuanhæ . .	$\frac{1}{4}$ grain in each lozenge
,, Morphinæ et Ipecacuanhæ	$\frac{1}{12}$ grain in each lozenge
Vinum Ipecacuanhæ . . .	22 grains to 1 fluid ounce

JABORANDI.

Jaborandi.

Synonym.—Pilocarpi Foliola.

The dried leaflets of Pilocarpus pennatifolius, *Lemaire*; *Pharm. Journ.* ser. 3, vol. v. page 582, plate.

Characters.—Leaflets very shortly stalked, usually four inches or more in length, oval-oblong or oblong-lanceolate, somewhat unequal at the base, obtuse and emarginate, slightly revolute and entire at the margins, coriaceous. Upper surface glabrous, except when young, dull green; under surface paler, often somewhat hairy, with a very prominent midrib, and seen to be marked irregularly all over with pellucid dots when held against the light. Odour when bruised slightly aromatic; taste on chewing slightly bitter and aromatic at first, but subsequently pungent and increasing the flow of saliva.

Dose of the powder.—5 to 60 grains.

Preparations.

Extractum Jaborandi
Infusum Jaborandi
Pilocarpinæ Nitras
Tinctura Jaborandi

JALAPA.

Jalap.

The dried tubercules of Ipomœa Purga, *Hayne* (Exogonium Purga, *Bentham*); *Bot. Mag.* vol. lxxiii. plate 4280.

Characters and Test.—Irregularly oblong, somewhat ovoid, napiform, or rarely fusiform, hard, compact, varying much in size, the larger frequently incised, or cut into halves or quarters. Externally dark brown, more or less irregularly furrowed and wrinkled, and marked with paler-coloured transverse lines or scars; internally dirty-yellowish or brownish, and frequently marked with dark brown irregular concentric circles. Odour faint, peculiar, and smoky, increased by rubbing or powdering; taste sweetish, acrid, and nauseous. Treated as for the preparation of Resin of Jalap, not less than ten per cent. of resin should be obtained, of which not more than one-tenth should be soluble in ether.

Dose.—10 to 30 grains.

Preparations.

Extractum Jalapæ	
Pulvis Jalapæ Compositus .	1 part in 3
,, Scammonii Compositus	3 parts in 8
Resina Jalapæ	
Tinctura Jalapæ . . .	54½ grains to 1 fluid ounce

JALAPÆ RESINA.

Resin of Jalap.

Take of

Jalap, in No. 40 powder . . .	8 ounces
Rectified Spirit	a sufficiency
Distilled Water	a sufficiency

Digest the jalap with sixteen fluid ounces of the spirit in a covered vessel, heating gently, for twenty-four hours; then transfer to a percolator, and, when the tincture ceases to pass, continue the percolation with successive portions of spirit until it ceases to dissolve anything more. Add to the tincture four fluid ounces of the water, and distil off the spirit by a water-bath. Remove the residue while hot to an open dish, and allow it to become cold. Pour off the supernatant fluid from the resin, wash this two or three times with hot water, and dry it on a porcelain plate by the heat of a stove or water-bath.

Characters and Tests.—In dark-brown opaque fragments, translucent at the edges, brittle, breaking with a resinous fracture, readily reduced to a pale-brown powder, sweetish in odour, acrid in the throat, easily soluble in rectified spirit, insoluble in oil of turpentine. The powder yields little or nothing to warm water, and not more than ten per cent. to ether.

Dose.—2 to 5 grains.

Preparation.—Pilula Scammonii Composita.

KAMALA.

Kamala.

A powder which consists of the minute glands and hairs obtained from the surface of the fruits of Mallotus philippinensis, *Müll. Arg.* (Rottlera tinctoria, *Roxb.*); *Roxb. Corom. Pl.* plate 168.

Characters and Test.—A fine granular mobile powder of a brick-red or madder colour, and nearly tasteless and inodorous. Water has scarcely any effect on it, even at a boiling temperature, but it forms deep red solutions with alcohol, ether, or chloroform. When examined by the microscope it is seen to consist of irregular spherical flattened or depressed garnet-red glands with wavy surfaces, mixed with nearly colourless thick-walled stellate hairs. On ignition in air it should yield four or five, or at most ten, per cent. of ash.

Dose.—30 grains to ¼ ounce.

KINO.

Kino.

The juice obtained from incisions made in the trunk of Pterocarpus Marsupium, *Roxb.*, *Roxb. Corom. Pl.* plate 116, inspissated without artificial heat.

Characters.—In small angular glistening opaque reddish-black brittle fragments, which in thin laminæ and at the edges are transparent and ruby-red; inodorous, very astringent, and when chewed sticking to the teeth and tinging the saliva blood-red. Almost entirely soluble in rectified spirit. It yields little or nothing to ether.

Dose.—10 to 30 grains.

Preparations.

Pulvis Catechu Compositus .	1 part in 5
,, Kino Compositus .	3¼ parts in 5
Tinctura Kino . . .	2 ounces to 1 pint

KRAMERIÆ RADIX.

Rhatany Root.

The dried root of (1) Peruvian Rhatany, Krameria triandra, *Ruiz and Pavon, Fl. Peruv.* vol. i. plate 93; or of (2) Savanilla Rhatany, Krameria Ixina, *Linn.* (Krameria tomentosa, *St. Hil.*); *Bentl. and Trim. Med. Pl.* vol. i. plate 31.

Characters.—1. Peruvian Rhatany is in branched or unbranched pieces, varying in length and thickness. It consists of a readily separable bark which varies in thickness from about one-twentieth to one-tenth of an inch, rough and scaly except in the smaller pieces, dark reddish-brown externally, and bright brownish-red on its inner surface; and of a hard brownish- or reddish-yellow woody axis. 2. Savanilla Rhatany is less irregular and knotty, and not so long or thick as the former. It is well characterised by its dark purplish or violet colour, and its smooth and thicker bark, which adheres firmly to the wood beneath, and is usually marked at irregular intervals by deep transverse cracks. The bark of both kinds has a strongly astringent taste, and when chewed tinges the saliva red, but it has no marked odour. The wood is nearly tasteless and inodorous.

Preparations.

Extractum Krameriæ	
Infusum Krameriæ . . .	1 ounce to 1 pint
Pulvis Catechu Compositus .	1 part in 5
Tinctura Krameriæ . . .	$2\frac{1}{2}$ ounces to 1 pint

LAC.

Milk.

The fresh milk of the Cow, Bos Taurus, *Linn.*

Preparation in which Milk is used.—Mistura Scammonii.

LACTUCA.

Lettuce.

The flowering herb of Lactuca virosa, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iii. plate 160.

Preparation.—Extractum Lactucæ.

LAMELLÆ ATROPINÆ.

Discs of Atropine.

Discs of gelatine, with some glycerine, each weighing about $\frac{1}{50}$ grain, and containing $\frac{1}{5000}$ grain of sulphate of atropine.

LAMELLÆ COCAINÆ.

Discs of Cocaine.

Discs of gelatine, with some glycerine, each weighing about $\frac{1}{50}$ grain, and containing $\frac{1}{200}$ grain of hydrochlorate of cocaine.

LAMELLÆ PHYSOSTIGMINÆ.

Discs of Physostigmine.

Discs of gelatine, with some glycerine, each weighing about $\frac{1}{50}$ grain, and containing $\frac{1}{1000}$ grain of physostigmine.

LARICIS CORTEX.

Larch Bark.

The bark of Pinus Larix, *Linn.* (Abies Larix, *Lamb.*); *Lamb. Ill. Gen. Pin.* 3rd ed. plate 48. Collected in spring, deprived of its outer rough portion, and dried.

Characters.—In flattish pieces or quills of varying lengths and sizes. The outer surface is dark-red or rosy, and somewhat uneven; inner surface nearly smooth, and yellowish-white or pinkish-red according to its age; fracture close, except the liber which is somewhat fibrous, and the fractured surfaces, except internally, of a deep carmine-red colour. Odour slightly balsamic and terebinthinous; taste astringent.

Preparation.—Tinctura Laricis, 2½ ounces to 1 pint.

LAUROCERASI FOLIA.

Cherry-Laurel Leaves.

The fresh leaves of Prunus Laurocerasus, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 98.

Characters.—Thick, coriaceous, on strong short petioles, oblong or somewhat obovate, five to seven inches long, tapering towards each end, recurved at the apex, distantly but sharply serrated and slightly revolute at the margins, dark-green, smooth, and shining above, much paler beneath, and with a prominent midrib, on either side of which, towards the base, are one or two glandular depressions. Inodorous except on bruising, when they emit a ratafia-like odour.

Preparation.—Aqua Laurocerasi, 1 pound to 1 pint.

LIMONIS CORTEX.

Lemon Peel.

Synonym.—**Limonis Pericarpium.**

The outer part of the rind or pericarp of the fresh fruit of Citrus Limonum, *Risso*; *Bentl. and Trim. Med. Pl.* vol. i. plate 54.

Characters.—Pale-yellow and more or less rough on the outer surface from the presence of glands containing volatile oil, which are imbedded in the tissue beneath; and having but a very small amount of the white spongy portion of the rind on its inner surface. Odour strong, peculiar, and fragrant; taste warm, aromatic, and bitter.

Preparations.

Infusum Aurantii Compositum .	112 grains to 1 pint
,, Gentianæ Compositum	½ ounce to 1 pint
Oleum Limonis	
Syrupus Limonis . . .	1 ounce to 1¾ pound
Tinctura Limonis . . .	2½ ounces to 1 pint

LIMONIS SUCCUS.

Lemon Juice.

The freshly expressed juice of the ripe fruit of Citrus Limonum, *Risso.*

Characters.—A slightly turbid yellowish liquid, with a sharp acid taste. Specific gravity 1·035 to 1·045. Quantity of citric acid in one fluid ounce, 36 to 46 grains.

Preparation.—Syrupus Limonis, 1 pint to 3½ pounds.

LINI FARINA.

Linseed Meal.

Linseed reduced to powder.

Preparations.

Cataplasma Carbonis
,, Conii
Cataplasma Lini
,, Sinapis
Cataplasma Sodæ Chlorinatæ

LINI SEMINA.

Linseed.

The dried ripe seeds of Linum usitatissimum, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. i. plate 39.

Characters and Test.—Small, varying in length from about one-sixth to one-fourth of an inch, more or less flattened, ovoid, somewhat obliquely pointed; brown, smooth, and shining on their outer surface, internally yellowish-white. Odourless, but with a mucilaginous oily taste. A decoction of linseed when cold is not made blue by solution of iodine.

Preparations.

Farina Lini	
Infusum Lini . . .	15 grains to 1 fluid ounce
Oleum Lini	

LINIMENTUM ACONITI.

Liniment of Aconite.

Take of

Aconite Root. in No. 40 powder .	20 ounces
Camphor	1 ounce
Rectified Spirit, a sufficiency to make	30 fluid ounces[1]

Mix the aconite with twenty fluid ounces of the spirit, and macerate in a closed vessel for three days, agitating occasionally; then transfer to a percolator, and, when the liquor ceases to pass, continue the percolation with more of the spirit, allowing the liquor to drop into a receiver containing the camphor, until the product measures the quantity above stated.

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[1] Improved exhaustion of the roots of aconite and belladonna requires the increased proportions of products as compared with those of B. P. 1867.

LINIMEN[illegible]M HYDRARGYRI.

Liniment of Mercury.

Take of
Solution of Ammonia . 1 ounce . . . . . or . . 1 part
Olive Oil . . . 1 fluid ounce . . ,, . . 1 fluid part
Mix with agitation u 1 fluid ounce . . ,, . . 1 fluid part
duced becomes of such co ıonia with one half of the liniment
a bottle. ırial ointment with the other half;

LINIMENTI

Linimeı]NTUM IODI.

Take of ınt of Iodine.
Belladonna Root, in
Camphor . . . . or . . 5 parts
Rectified Spirit, a sufficiency to m . ,, . . 2 parts

Mix the belladonna with twenty fluid ounces orart
and macerate in a closed vessel for three days, agitatid parts
sionally; then transfer to a percolator, and, when the l in
ceases to pass, continue the percolation with more of the spirit,
allowing the liquor to drop into a receiver containing the
camphor, until the product measures the quantity above stated.

LINIMENTUM CALCIS.

Liniment of Lime.

Take of
Solution of Lime . 2 fluid ounces . . or . . 1 fluid part
Olive Oil . . 2 fluid ounces . . ,, . . 1 fluid part

Mix together with agitation.

LINIMENTUM CAMPHORÆ.

Liniment of Camphor.

Take of
Camphor . . . 1 ounce . . . . . . or . . 1 part
Olive Oil . . . 4 fluid ounces . . ,, . . 4 fluid parts

Dissolve the camphor in the oil.

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[1] See the footnote on the previous page.

Reduce the soap to fine shreds, and mix this with the water and glycerine in a porcelain dish over a water-bath. When the soap is dissolved, pour the liquid into a mortar in which the iodide of potassium has previously been powdered. Mix briskly and continue the trituration until the mixture is cold. Set aside for an hour; then rub well the oil of lemon into the cream-like product.

LINIMENTUM SAPONIS.

Liniment of Soap.

Take of

Hard Soap, in fine shavings . .	2 ounces	or . .	16 parts
Camphor . .	1 ounce	,, . .	8 parts
Oil of Rosemary .	3 fluid drachms .	,, . .	3 fluid parts
Rectified Spirit .	16 fluid ounces .	,, . .	128 fluid parts
Distilled Water .	4 fluid ounces . .	,, . .	32 fluid parts

Mix the water with the spirit, and add the oil of rosemary, the soap, and the camphor. Macerate for seven days at a temperature not exceeding 70° F. (21°·1 C.) with occasional agitation, and filter.

Preparation.—Linimentum Opii.

LINIMENTUM SINAPIS COMPOSITUM.

Compound Liniment of Mustard.

Take of

Oil of Mustard .	1 fluid drachm .	or .	1·4 fluid part
Ethereal Extract of Mezereon . .	40 grains	,, .	1 part
Camphor . .	120 grains	,, .	3 parts
Castor Oil . .	5 fluid drachms .	,, .	7 fluid parts
Rectified Spirit .	4 fluid ounces . .	,, .	44 fluid parts

Dissolve the extract of mezereon and camphor in the spirit, and add the oil of mustard and castor oil.

LINIMENTUM TEREBINTHINÆ.

Liniment of Turpentine.

Take of

Soft Soap	2 ounces	or	2 parts
Distilled Water	2 fluid ounces	,,	2 fluid parts
Camphor	1 ounce	,,	1 part
Oil of Turpentine	16 fluid ounces	,,	16 fluid parts

Mix the soap with the water; dissolve the camphor in the oil of turpentine; then rub these fluids together until they are thoroughly mixed.

LINIMENTUM TEREBINTHINÆ ACETICUM.

Liniment of Turpentine and Acetic Acid.

Take of

Oil of Turpentine	4 fluid ounces	or	4 fluid parts
Glacial Acetic Acid	1 ounce	,,	1 part
Liniment of Camphor	4 fluid ounces	,,	4 fluid parts

Mix.

LIQUOR ACIDI CHROMICI.

Solution of Chromic Acid.

A solution containing the equivalent of 25 per cent. of anhydrous chromic acid, or chromic anhydride, CrO_3; or 29·5 per cent. of real chromic acid, H_2CrO_4.

Take of

Chromic Acid	1 ounce	or	1 part
Distilled Water	3 fluid ounces	,,	3 fluid parts

Dissolve.

Characters.—An orange-red, inodorous, caustic, strongly acid liquid. Specific gravity 1·185. One fluid drachm contains chromic acid equivalent to nearly eighteen grains of chromic anhydride, CrO_3.

LIQUOR AMMONIÆ.

Solution of Ammonia.

Ammoniacal gas, NH_3, dissolved in water.

Take of

Strong Solution of Ammonia	1 pint . . .	or . . 1 fluid part
Distilled Water . . .	2 pints . .	,, . . 2 fluid parts

Mix, and preserve in a stoppered bottle.

Tests.—Specific gravity 0·959. 85 grains by weight requires for neutralisation 500 grain-measures of the volumetric solution of oxalic acid, corresponding to 10 per cent. by weight of ammonia gas, NH_3. One fluid drachm contains 5·2 grains of ammonia gas.

Preparation.

Linimentum Ammoniæ . . .	1 volume in 4

LIQUOR AMMONIÆ FORTIOR.

Strong Solution of Ammonia.

Ammoniacal gas, NH_3, dissolved in water, and constituting 32·5 per cent. of the solution. It may be obtained by the following process:—

Take of

Chloride of Ammonium, in coarse powder	3 pounds
Slaked Lime	4 pounds
Distilled Water	32 fluid ounces

Mix the lime with the chloride of ammonium, and introduce the mixture into an iron bottle placed in a metal pot ur- rounded by sand. Connect the iron tube, which screw ir- tight into the bottle in the usual manner, by corks, glass es and caoutchouc collars, with a Woulf's bottle capable of h ns a pint; connect this with a second Woulf's bottle of the rom size, the second bottle with a flask or other vessel of the capacity of three pints in which twenty-two ounces of the distilled water is placed, and this vessel, by means of a tube bent twice at right angles, with an ordinary bottle containing the remaining ten ounces of distilled water. Bottles 1 and 2 are empty, and the latter and the vessel which contains the twenty-two ounces of distilled water are furnished each with a siphon safety tube charged with a very short column of mercury. The heat of a fire, which should be very gradually raised, is now to be applied to the metal pot, and continued until bubbles of condensible gas cease to escape from the extremity of the glass tube which dips into the water of the flask. The process being terminated, the latter vessel will contain about forty-three fluid ounces of strong solution of ammonia.

Bottles 1 and 2 will now include, the first about sixteen, the second about ten fluid ounces of a coloured ammoniacal liquid. Place this in a flask closed by a cork, which should be perforated by a siphon safety tube containing a little mercury, and also by a second tube bent twice at right angles, and made to pass to the bottom of the terminal bottle used in the preceding process. Apply heat to the flask until the coloured liquid it contains is reduced to three-fourths of its original bulk. The product now contained in the terminal bottle will be nearly of the strength of solution of ammonia, and may be made exactly so by the addition of the proper quantity of distilled water or of strong solution of ammonia.

Characters and Tests.—A colourless liquid, with a characteristic and very pungent odour, and strong alkaline reaction. Specific gravity 0·891. 52·3 grains by weight requires for neutralisation 1000 grain-measures of the volumetric solution of oxalic acid. One fluid drachm contains 15·83 grains of ammonia gas, NH_3. When diluted with four times its volume of distilled water, it does not give precipitates with solution of lime, oxalate of ammonium, sulphydrate of ammonium, or ammonio-sulphate of copper; and, when treated with an excess of nitric acid, is not rendered turbid by nitrate of silver or by chloride of barium.

Preparations for which Strong Solution of Ammonia is used.

Ammonii Phosphas
Linimentum Camphoræ Compositum
Liquor Ammoniæ
 ,, Ammonii Citratis Fortior
Spiritus Ammoniæ Aromaticus
 ,, ,, Fœtidus
Tinctura Opii Ammoniata

LIQUOR AMMONII ACETATIS.

Solution of Acetate of Ammonium.

Synonyms.—Liquor Ammoniæ Acetatis; Solution of Acetate of Ammonia.

Acetate of ammonium, $NH_4C_2H_3O_2$, dissolved in water.

Take of

Strong Solution of Acetate of Ammonium .	4 fluid ounces .	or . .	1 fluid part
Distilled Water, sufficient to produce	20 fluid ounces .	,, . .	5 fluid parts

Mix. The solution should be stored in bottles free from lead. Specific gravity 1·022.

Dose.—2 to 6 fluid drachms.

LIQUOR AMMONII ACETATIS FORTIOR.

Strong Solution of Acetate of Ammonium.

Take of

Carbonate of Ammonium . .	17½ ounces
Acetic Acid	50 fluid ounces, or a sufficiency
Distilled Water . . .	a sufficiency

Crush the carbonate of ammonium; add it gradually to about 45 ounces of the acetic acid; then add more of the acid until a neutral liquid results; lastly add sufficient distilled water to yield three pints of product. The solution should be stored in bottles free from lead.

Characters.—A little of the solution, heated in a test-tube to expel carbonic acid, should be neutral to test-papers. Specific gravity 1·073.

Dose.—25 to 75 minims.

Preparation.—Liquor Ammonii Acetatis.

LIQUOR AMMONII CITRATIS.

Solution of Citrate of Ammonium.

Synonyms.—Liquor Ammoniæ Citratis; Solution of Citrate of Ammonia.

Citrate of ammonium, $(NH_4)_3C_6H_5O_7$, dissolved in water.

Take of

Strong Solution of Citrate of Ammonium	5 fluid ounces	or	1 fluid part
Distilled Water, sufficient to produce	20 fluid ounces	,,	4 fluid parts

Mix. The solution should be stored in bottles free from lead. Specific gravity 1·062.

Dose.—2 to 6 fluid drachms.

LIQUOR AMMONII CITRATIS FORTIOR.

Strong Solution of Citrate of Ammonium.

Take of

Citric Acid	**12 ounces**
Strong Solution of Ammonia	**11 fluid ounces, or a sufficiency**
Distilled Water	**a sufficiency**

Neutralise the acid with the ammonia, adding sufficient distilled water to yield one pint of product. The solution should be stored in bottles free from lead.

Characters.—Neutral to test-papers. Specific gravity 1·209.

Dose.—½ to 1½ fluid drachms.

Preparation.—Liquor Ammonii Citratis.

LIQUOR ANTIMONII CHLORIDI.

Solution of Chloride of Antimony.

Take of

Purified Black Antimony . . .	1 pound
Hydrochloric Acid	4 pints

Place the purified black antimony in a porcelain vessel; pour upon it the hydrochloric acid, and, constantly stirring, apply to the mixture, beneath a flue with a good draught, a little heat, which must be gradually augmented as the evolution of gas begins to slacken, until the liquid boils. Maintain it at this temperature for fifteen minutes; then remove the vessel from the fire, and filter the liquid through calico into another vessel, returning what passes through first, that a perfectly clear solution may be obtained. Boil this down to the bulk of two pints, and preserve it in a stoppered bottle.

Characters and Tests.—A heavy liquid usually of a yellowish-red colour. A little of it dropped into water gives a white precipitate, and the filtered solution lets fall a copious deposit on the addition of nitrate of silver. If the white precipitate formed by water be treated with sulphuretted hydrogen, it becomes orange-coloured. The specific gravity of the solution is about 1·47. One fluid drachm of it mixed with a solution of a quarter of an ounce of tartaric acid in four fluid ounces of water, forms a clear solution, which, if treated with sulphuretted hydrogen, gives an orange precipitate, weighing, when washed and dried at 212° F. (100° C.), about 22 grains.

Preparation for which Solution of Chloride of Antimony is used.

Antimonii Oxidum

LIQUOR ARSENICALIS.

Arsenical Solution.

Synonyms.—**Liquor Potassæ Arsenitis; Fowler's Solution.**

Take of

Arsenious Acid, in powder	of each	87 grains
Carbonate of Potassium		
Compound Tincture of Lavender		5 fluid drachms
Distilled Water		a sufficiency

Place the arsenious acid and the carbonate of potassium in a flask with ten ounces of the water, and apply heat until a clear solution is obtained. Allow this to cool. Then add the compound tincture of lavender, and as much distilled water as will make the bulk one pint.

Characters and Tests.—A reddish liquid, alkaline to test-paper, and having the odour of lavender. Specific gravity 1·010. After being acidulated with hydrochloric acid it gives, with sulphuretted hydrogen, a yellow precipitate, which is brightest when the arsenical solution has been previously diluted. 442 grains by weight (1 fluid ounce) boiled for five minutes with ten grains of bicarbonate of sodium, and when cold diluted with six fluid ounces of water to which a little mucilage of starch has been added, does not give with the volumetric solution of iodine a permanent blue colour until 875 grain-measures have been added; corresponding to 1 per cent.[1] of arsenious acid, or to rather more than 4 grains (4⅓) in one fluid ounce.

Dose.—2 to 8 minims.

LIQUOR ARSENICI HYDROCHLORICUS.

Hydrochloric Solution of Arsenic.

Take of

Arsenious Acid, in powder	87 grains
Hydrochloric Acid	2 fluid drachms
Distilled Water	a sufficiency

Boil the arsenious acid with the hydrochloric acid and four ounces of the water until it is dissolved, then add distilled water to make the bulk up to one pint.

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[1] It contained 1 in 109 in B. P. 1867.

Characters and Tests.—A colourless liquid, having an acid reaction. Specific gravity 1·010. Sulphuretted hydrogen gives at once a bright yellow precipitate. 442 grains by weight (1 fluid ounce) boiled for five minutes with twenty grains of bicarbonate of sodium and then diluted with six fluid ounces of distilled water to which a little mucilage of starch has been added, does not give with the volumetric solution of iodine a permanent blue colour until 875 grain-measures have been added; corresponding to 1 per cent.[1] of arsenious acid, or to rather more than 4 grains ($4\frac{1}{3}$) in one fluid ounce.

Dose.—2 to 8 minims.

LIQUOR ARSENII ET HYDRARGYRI IODIDI.

Solution of Iodide of Arsenium and Mercury.

Synonym.—Donovan's Solution.[2]

Take of

Iodide of Arsenium Red Iodide of Mercury	of each	45 grains
Distilled Water		a sufficiency

Triturate the iodides with about an ounce and a half of distilled water until nearly all is dissolved. Pass through a filter, and wash the latter with sufficient water to produce ten fluid ounces of solution.

Characters and Tests.—A clear pale yellow liquid with a metallic flavour. Specific gravity 1·016. Sulphuretted hydrogen throws down a precipitate partially insoluble in strong nitric acid; while the dissolved part, when diluted, yields a yellow precipitate on the gradual addition of solution of sulphydrate of ammonium. One fluid ounce contains about one-hundredth of a molecular weight in grains (about 1 per cent. by weight) of arsenious iodide, AsI_3, and of mercuric iodide, HgI_2.

Dose.—10 to 80 minims.

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[1] It contained 1 in 109 in B. P. 1867.

[2] The original Donovan's solution contained nearly 42 grains of each iodide in 10 fluid ounces.

LIQUOR ATROPINÆ SULPHATIS.

Solution of Sulphate of Atropine.[1]

Take of

Sulphate of Atropine	9 grains	or . 1 part
Camphor Water .	16½ fluid drachms .	,, . 99 fluid parts

Dissolve.

Dose.—1 to 4 minims.

LIQUOR BISMUTHI ET AMMONII CITRATIS.

Solution of Citrate of Bismuth and Ammonium.

Synonym.—Liquor Bismuthi.

Take of

Citrate of Bismuth	800 grains
Solution of Ammonia Distilled Water . } of each . .	a sufficiency

Rub the citrate of bismuth to a paste with a little of the water; add the solution of ammonia, gradually and with stirring, until the salt is just dissolved. Dilute with distilled water to form one pint.

Characters and Tests.—A colourless solution, with a slightly metallic taste. Specific gravity 1·07. Neutral or slightly alkaline to test-paper; is freely miscible with water; heated with alkalies evolves ammonia, and yields a white precipitate. Evaporated to dryness and the residue ignited, a charred mass with a yellow edge results; this treated with nitric acid affords a solution which should stand the tests for impurities described under 'Purified Bismuth.' Two fluid drachms of the solution mixed with an ounce of distilled water, and treated with sulphuretted hydrogen in excess, yields a black precipitate, which, when washed and dried, weighs about 7 grains.

One fluid drachm contains an amount of bismuth equivalent to about 8 grains of oxide of bismuth.

Dose.—½ to 1 fluid drachm.

Preparation.—Bismuthi et Ammonii Citras.

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[1] The strength is 1 in 100. It was 1 in 109 in B. P. 1867.

LIQUOR CALCII CHLORIDI.

Solution of Chloride of Calcium.

Take of

Chloride of Calcium	88 grains	or	1 part
Distilled Water	1 fluid ounce	,,	5 fluid parts

Dissolve, and filter if necessary. Specific gravity 1·145.

Dose.—15 to 50 minims.

LIQUOR CALCIS.

Solution of Lime.

Synonyms.—Aqua Calcis; Lime Water.

Take of

Slaked Lime	2 ounces
Distilled Water	a sufficiency

Wash the slaked lime with some of the water until a little of the filtered liquid, after being acidified with nitric acid, yields no turbidity with solution of nitrate of silver. Put the washed lime into a stoppered bottle containing one gallon of the water, and shake well for two or three minutes. After twelve hours the excess of lime will have subsided, and the clear solution may be drawn off with a siphon as it is required for use, or transferred to a green-glass bottle furnished with a well-ground stopper.

Test.—Ten fluid ounces requires for neutralisation 180 grain-measures of the volumetric solution of oxalic acid, which corresponds to about 5 grains of lime, CaO. Acidified with nitric acid, nitrate of silver causes no precipitate.

Dose.—1 to 4 fluid ounces.

Preparations for which Solution of Lime is used.

Argenti Oxidum
Linimentum Calcis
Lotio Hydrargyri Flava
,, ,, Nigra

LIQUOR CALCIS CHLORINATÆ.

Solution of Chlorinated Lime.

Take of

Chlorinated Lime	1 pound	or	1 part
Distilled Water	1 gallon	,,	10 parts

Mix well the water and the chlorinated lime by trituration in a mortar, and, having poured the mixture into a stoppered bottle, let it be well shaken several times for the space of three hours. Pour out now the contents of the bottle on a calico filter, and let the solution which passes through be preserved in a stoppered bottle.

Tests.—Specific gravity about 1·055. Eighty grains by weight mixed with twenty grains of iodide of potassium dissolved in four fluid ounces of water, when acidulated with two fluid drachms of hydrochloric acid, gives a red solution which requires for the discharge of its colour not less than 450 grain-measures of the volumetric solution of hyposulphite of sodium, corresponding to about 2 per cent. of available chlorine. When the solution of chlorinated lime is made with the best chlorinated lime, and is quite fresh, it may yield about 8 per cent. of available chlorine.

LIQUOR CALCIS SACCHARATUS.

Saccharated Solution of Lime.

Take of

Slaked Lime	1 ounce	or	1 part
Refined Sugar, in powder	2 ounces	,,	2 parts
Distilled Water	1 pint	,,	20 parts

Mix the lime and the sugar by trituration in a mortar. Transfer the mixture to a bottle containing the water, and having closed this with a cork shake it occasionally for a few hours. Finally separate the clear solution with a siphon, avoiding unnecessary exposure to air, and keep it in a well-stoppered bottle.

Tests.—Specific gravity 1·052. 460·2 grains by weight

(1 fluid ounce) requires for neutralisation 254 grain-measures of the volumetric solution of oxalic acid, which corresponds to 7·11 grains of lime, CaO, in one fluid ounce.

Dose.—15 to 60 minims.

LIQUOR CHLORI.

Solution of Chlorine.

Chlorine gas dissolved in water. The solution should be freshly prepared.

Take of

Hydrochloric Acid . . .	6 fluid ounces
Black Oxide of Manganese, in fine powder	1 ounce
Distilled Water	34 fluid ounces

Put the oxide of manganese into a gas-bottle, and, having poured upon it the hydrochloric acid diluted with two ounces of the water, apply heat gently, and, by suitable tubes, cause the gas, as it is developed, to pass through two ounces of the water placed in an intermediate small phial, and thence to the bottom of a three-pint bottle containing the remainder of the water, the mouth of which is loosely plugged with tow. As soon as the chlorine ceases to be developed, let the bottle be disconnected from the apparatus in which the gas has been generated, corked loosely, and shaken until the chlorine is absorbed. Lastly, introduce the solution into a green-glass bottle furnished with a well-fitting stopper, and keep it in a cool and dark place.

Characters and Tests.—A yellowish-green liquid, smelling strongly of chlorine, and immediately discharging the colour of a dilute solution of sulphate of indigo. Specific gravity 1·003. Evaporated it leaves no residue. When twenty grains of iodide of potassium dissolved in an ounce of distilled water is added to 439 grains by weight (1 fluid ounce) of this preparation, the mixed solution acquires a deep red colour, which requires for its discharge 750 grain-measures of the volumetric solution of hyposulphite of sodium, corresponding to 2·66 grains of chlorine.

Dose.—10 to 20 minims.

LIQUOR EPISPASTICUS.

Blistering Liquid.

Synonym.—Linimentum Cantharidis.

Take of

Cantharides, in powder . . .	5 ounces[1]
Acetic Ether	a sufficiency

Mix the cantharides with three fluid ounces of acetic ether; pack in a percolator, and at the expiration of twenty-four hours pour acetic ether over the contents of the percolator, and allow the solution to pass slowly through until twenty fluid ounces are obtained. Keep the liquid in a stoppered bottle.

Preparation.—Collodium Vesicans.

LIQUOR FERRI ACETATIS.

Solution of Acetate of Iron.

Synonyms.—Solution of Ferric Acetate; Solution of Peracetate of Iron.

The same strength as Tincture of Acetate of Iron.

Take of

Strong Solution of Acetate of Iron .	5 fluid ounces
Distilled Water, sufficient to produce, after admixture, ...	20 fluid ounces

Specific gravity 1·031.

Dose.—5 to 30 minims.

LIQUOR FERRI ACETATIS FORTIOR.

Strong Solution of Acetate of Iron.

Take of

Solution of Persulphate of Iron .	5 fluid ounces
Solution of Ammonia	a sufficiency
Glacial Acetic Acid, liquefied . .	3 fluid ounces
Distilled Water	a sufficiency

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[1] Improved exhaustion of the cantharides requires the use of five ounces in place of the eight ounces of B. P. 1867.

Mix eight fluid ounces of solution of ammonia with one pint of distilled water; to this gradually add the solution of persulphate of iron previously diluted with about a pint of distilled water; stir the whole thoroughly, taking care that ammonia is, even finally, in slight excess, as indicated by the odour of the mixture. Let the whole stand for two hours, stirring occasionally; then put it on a calico filter, and, when the liquid has drained away, wash the precipitated ferric hydrate with distilled water until the liquid which passes through the filter ceases to give a precipitate with solution of chloride of barium. Let the ferric hydrate drain; squeeze it to remove superfluous moisture; dissolve it in the glacial acetic acid; and make the volume up to ten fluid ounces with distilled water. Allow any insoluble matter to subside, and pour off the clear solution.

Characters and Tests.—A deep red fluid with a sour styptic taste and acetous odour, miscible with water or rectified spirit in all proportions. Diluted with water it yields a blue precipitate with ferrocyanide, but not with ferricyanide of potassium. Specific gravity 1·127. A fluid drachm, diluted with two fluid ounces of water, gives with excess of ammonia a reddish-brown precipitate which when washed and ignited weighs 5·7 grains.

Dose.—1 to 8 minims.

Preparations.

Liquor Ferri Acetatis | Tinctura Ferri Acetatis

LIQUOR FERRI DIALYSATUS.

Solution of Dialysed Iron.

This solution of dialysed iron, so called, is a solution of highly basic ferric oxychloride, or chloroxide of iron, from which most of the acidulous matter has been removed by dialysis.

Take of

Strong Solution of Perchloride of Iron .	7 fluid ounces
Solution of Ammonia Distilled Water } of each . .	a sufficiency

Mix six ounces of the solution of perchloride of iron with two pints of distilled water, and stir into the mixture sufficient diluted solution of ammonia to impart, after thorough agitation, a distinct ammoniacal odour. Filter through calico, wash the precipitated ferric hydrate with distilled water, and then squeeze it to remove superfluous moisture. Add the precipitate to the remainder of the solution of perchloride of iron, stir thoroughly, warm gently, and when complete or nearly complete solution is obtained filter if necessary and place the liquid in a covered dialyser; then subject it to a stream of water in the usual manner until the solution on the dialyser is almost tasteless. The resulting solution should measure twenty-eight fluid ounces.

Characters and Tests.—A clear dark reddish-brown liquid, free from any marked ferruginous taste. Neutral to test-papers. Specific gravity about 1·407. The solution gives no precipitate with ferrocyanide of potassium or with nitrate of silver, but after being heated with hydrochloric acid it yields with ferrocyanide of potassium a blue precipitate. 100 grains by weight affords a precipitate with a solution of ammonia, which, washed, dried, and ignited, weighs five grains.

Dose.—10 to 30 minims.

LIQUOR FERRI PERCHLORIDI.

Solution of Perchloride of Iron.

Synonym.- **Solution of Ferric Chloride.**

The same strength as Tincture of Perchloride of Iron.

Take of

Strong Solution of Perchloride of Iron	5 fluid ounces
Distilled Water, sufficient to produce, after admixture, ...	20 fluid ounces

Specific gravity 1·11.

Dose.—10 to 30 minims.

LIQUOR FERRI PERCHLORIDI FORTIOR.

Strong Solution of Perchloride of Iron.

Take of

Iron Wire	4 ounces
Hydrochloric Acid	20½ fluid ounces
Nitric Acid	1½ fluid ounce
Distilled Water	a sufficiency

Place the iron wire in a flask; add a mixture of twelve and a half fluid ounces of hydrochloric acid and seven of water; expose the whole to a moderate temperature until effervescence ceases; heat to boiling; filter from undissolved iron, rinsing the flask and contents with a little water and pouring this over the filter; add to the filtrate seven fluid ounces of hydrochloric acid; mix, and pour the solution in a slow continuous stream into a fluid ounce and a half of nitric acid, evolution of red fumes being promoted if necessary by a slight application of heat. Evaporate the product until no more nitrous fumes escape and a precipitate begins to form; then add one fluid ounce of hydrochloric acid and sufficient water to produce seventeen and a half fluid ounces of the solution.

Characters and Tests.—An orange-brown solution with a strong styptic taste, miscible with water and rectified spirit in all proportions. Diluted with water it is precipitated white by nitrate of silver, and blue by ferrocyanide of potassium, but not at all by ferricyanide of potassium. Specific gravity about 1·42. A fluid drachm of it diluted with two fluid ounces of water gives, upon the addition of an excess of solution of ammonia, a reddish-brown precipitate, which, when well washed and incinerated, weighs between fifteen and sixteen grains. A piece of copper boiled for a few minutes in 50 or 100 grains of this solution, diluted with water, then rinsed in water, dried, and heated in a dry test-tube, yields no white crystalline sublimate. Two ounces of iron are contained in ten fluid ounces of the solution.

Preparations for which Strong Solution of Perchloride of Iron is used.

Liquor Ferri Dialysatus	
,, ,, Perchloridi . . .	1 volume in 4
Tinctura Ferri Perchloridi . . .	1 volume in 4

LIQUOR FERRI PERNITRATIS.

Solution of Pernitrate of Iron.

Take of

Fine Iron Wire, free from rust .	1 ounce
Nitric Acid	4½ fluid ounces
Distilled Water	a sufficiency

Dilute the nitric acid with sixteen ounces of the water, introduce the iron wire into the mixture, and leave them in contact until the metal is dissolved, taking care to moderate the action, should it become too violent, by the addition of a little more distilled water. Filter the solution, and add to it as much distilled water as will make its bulk one pint and a half.

Characters and Tests.—A clear solution of a reddish-brown colour, slightly acid and astringent to the taste; gives a blue precipitate with the ferrocyanide of potassium. When to a little of it placed in a test-tube half its volume of pure sulphuric acid is added, and then a solution of sulphate of iron is poured on, the whole assumes a dark-brown colour. Specific gravity 1·107. One fluid drachm treated with an excess of solution of ammonia gives a precipitate which, when washed, dried, and incinerated, weighs 2·6 grains. It gives no precipitate with ferricyanide of potassium.

Dose.—10 to 40 minims.

LIQUOR FERRI PERSULPHATIS.

Solution of Persulphate of Iron.

Synonym.—**Solution of Ferric Sulphate.**

Take of

Sulphate of Iron	8 ounces
Sulphuric Acid Nitric Acid } of each	6 fluid drachms
Distilled Water	12 fluid ounces, or a sufficiency

Add the sulphuric acid to ten ounces of the water, and dissolve the sulphate of iron in the mixture with the aid of heat. Mix the nitric acid with the remaining two ounces of the water, and add to this diluted acid, warmed, the solution of sulphate of iron. Concentrate by boiling, until, by the sudden disengagement of ruddy vapours, the liquid ceases to be black and acquires a red colour. A drop of the solution is now to be tested with ferricyanide of potassium, and if a blue precipitate forms, a few additional drops of nitric acid should be added, and the boiling renewed, in order that the whole of the sulphate may be converted into persulphate of iron. When the solution is cold, make the quantity eleven fluid ounces by the addition, if necessary, of distilled water.

Characters and Tests.—A dense solution of a dark red colour, inodorous and very astringent, miscible in all proportions with alcohol and water. Diluted with ten volumes of water, it gives a white precipitate with chloride of barium, and a blue precipitate with ferrocyanide, but not with ferricyanide, of potassium. Specific gravity 1·441. One fluid drachm diluted with two ounces of distilled water gives, upon the addition of an excess of solution of ammonia, a precipitate which, when well washed and incinerated, weighs 11·44 grains.

Preparations for which Solution of Persulphate of Iron is used.

Ferri et Ammonii Citras
,, et Quininæ Citras
Ferri Peroxidum Hydratum
Ferrum Tartaratum

LIQUOR GUTTA PERCHA.

Solution of Gutta Percha.

Take of

Gutta Percha, in thin slices	1 ounce
Chloroform	8 fluid ounces
Carbonate of Lead, in fine powder	1 ounce

Add the gutta percha to six fluid ounces of the chloroform in a stoppered bottle, and shake them together frequently until solution has been effected. Then add the carbonate of lead previously mixed with the remainder of the chloroform, and having several times shaken the whole together, set the mixture aside, and let it remain at rest until the insoluble matter has subsided. Lastly, decant the clear liquid, and keep it in a well-stoppered bottle.

Preparation for which this solution is used.

Charta Sinapis

LIQUOR HYDRARGYRI NITRATIS ACIDUS.

Acid Solution of Nitrate of Mercury.

Synonyms.—Acid Solution of Mercuric Nitrate; Acid Solution of Pernitrate of Mercury.

Take of

Mercury	4 ounces
Nitric Acid	5 fluid ounces
Distilled Water	1½ fluid ounce

Mix the nitric acid with the water in a flask, and dissolve the mercury in the mixture without the application of heat. Boil gently for fifteen minutes, cool, and preserve the solution, which should weigh about twelve ounces, in a stoppered bottle away from the light.

Characters and Tests.—A colourless and strongly acid solution, which gives a yellow precipitate with solution of potash added in excess. If a crystal of sulphate of iron be

dropped into it, in a little time the salt of iron, and the liquid in its vicinity, acquire a dark colour. Specific gravity about 2·0. Does not give any precipitate when a little of it is dropped into hydrochloric acid diluted with twice its volume of water.

LIQUOR HYDRARGYRI PERCHLORIDI.

Solution of Perchloride of Mercury.

Synonym.—**Liquor Hydrargyri Bichloridi; Solution of Mercuric Chloride.**

Take of

Perchloride of Mercury Chloride of Ammonium	of each 10 grains	or	1 part
Distilled Water	1 pint	,,	875 fl. parts

Dissolve.

Dose.—½ fluid drachm to 2 fluid drachms.

LIQUOR IODI.

Solution of Iodine.[1]

Take of

Iodine	22 grains	or	10 parts
Iodide of Potassium	33 grains	,,	15 parts
Distilled Water sufficient to produce	1 fluid ounce	,,	200 fluid parts

Dissolve.

LIQUOR LITHIÆ EFFERVESCENS.

Effervescing Solution of Lithia.

Synonyms.—**Aqua Lithiæ Effervescens; Lithia Water.**

Take of

Carbonate of Lithium	10 grains
Water	1 pint

Mix in a suitable apparatus, and force into it as much pure washed carbonic acid gas, obtained by the action of sulphuric acid on chalk, as can be introduced with a pressure of about

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[1] The strength is 5 in 100. It was 5 in 109 in B. P. 1867.

four atmospheres. Keep the solution in bottles securely closed, to prevent the escape of the compressed gas.

Characters and Tests.—Effervesces strongly when the containing vessel is opened, carbonic acid gas escaping. The liquid is clear and sparkling, and has an agreeable acidulous taste. Half a pint of it, evaporated to dryness, yields five grains of a white solid residue, answering to the tests for carbonate of lithium.

Dose.—5 to 10 fluid ounces.

LIQUOR MAGNESII CARBONATIS.

Solution of Carbonate of Magnesium.

Synonym.—Fluid Magnesia.

Take of

Sulphate of Magnesium . . .	2 ounces
Carbonate of Sodium	$2\frac{1}{2}$ ounces
Distilled Water	a sufficiency

Dissolve the two salts separately each in half a pint of water. Heat the solution of sulphate of magnesium to the boiling point, then add to it the solution of carbonate of sodium, and boil them together until carbonic acid ceases to be evolved. Collect the precipitated carbonate of magnesium on a calico filter, and wash it with distilled water until what passes ceases to give a precipitate with chloride of barium. Mix the washed precipitate with a pint of distilled water, and, putting them into a suitable apparatus, force into it pure washed carbonic acid gas obtained by the action of sulphuric acid on chalk. Let the mixture remain in contact with excess of carbonic acid, retained there under pressure of about three atmospheres for twenty-four hours or longer, then filter the liquid to remove any undissolved carbonate of magnesium, and again pass carbonic acid gas into the filtered solution. Finally, keep the solution in a bottle securely closed, to prevent the escape of carbonic acid.

This solution contains nearly ten grains of the official carbonate of magnesium in a fluid ounce, or about 2 per cent.

Characters and Tests.—Effervesces slightly, or not at all, when the containing vessel is first opened. The liquid is clear and free from any bitter taste. A fluid ounce of it, evaporated to dryness, yields a white solid residue, which after being calcined weighs about four grains. This residue is insoluble in water and answers to the tests for magnesia.

Dose.—1 to 2 fluid ounces.

LIQUOR MAGNESII CITRATIS.

Solution of Citrate of Magnesium.

Synonym.—Effervescing Solution of Citrates of Magnesium and Potassium.

Take of

Carbonate of Magnesium	100 grains
Citric Acid	200 grains
Syrup of Lemons	½ fluid ounce
Bicarbonate of Potassium, in crystals	40 grains
Water	a sufficiency

Dissolve the citric acid in two ounces of the water, and having added the carbonate of magnesium, stir until it is dissolved. Filter the solution into a strong half-pint bottle, add the syrup and sufficient water to nearly fill the bottle, then introduce the bicarbonate of potassium, and immediately close the bottle with a cork which should be secured with string or wire. Afterwards shake the bottle until the bicarbonate of potassium has dissolved.

Dose.—5 to 10 fluid ounces.

LIQUOR MORPHINÆ ACETATIS.

Solution of Acetate of Morphine.[1]

Take of

Acetate of Morphine	9 grains	or	1 part
Diluted Acetic Acid	18 minims	,,	2 fluid parts
Rectified Spirit	½ fluid ounce	,,	24 fluid parts
Distilled Water	1½ fluid ounces	,,	73 fluid parts

Mix the acid, the spirit, and the water, and dissolve the acetate of morphine in the mixture.

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[1] The strength is about 1 in 100. It was about 1 in 109 in B. P. 1867.

The acetate of morphine employed should be recently prepared, and of such quality that twenty grains will form a clear solution with one fluid drachm of water by the help of not more than one grain of acetic acid.

Solution of Acetate of Morphine may also be prepared by diluting ninety minims of Injectio Morphinæ Hypodermica with sufficient of a mixture of one volume of rectified spirit and two volumes of water to form two fluid ounces of the solution.

Dose.—10 to 60 minims.

LIQUOR MORPHINÆ BIMECONATIS.

Solution of Bimeconate of Morphine.

Take of

Hydrochlorate of Morphine	9 grains
Solution of Ammonia	a sufficiency
Meconic Acid	6 grains
Rectified Spirit	½ fluid ounce
Distilled Water	a sufficiency

Dissolve the hydrochlorate of morphine in two or three drachms of distilled water, aiding solution by warmth; then add solution of ammonia until morphine ceases to be precipitated; cool; filter; wash the precipitate with distilled water until the washings cease to give a precipitate with nitrate of silver; drain; mix the precipitate with sufficient water to produce an ounce and a half; add the rectified spirit and the meconic acid; dissolve.

Characters and Tests.—A colourless or nearly colourless liquid. Solution of potash produces a white precipitate insoluble in excess. Nitric acid gives an orange-red coloration, and neutral solution of perchloride of iron a blood-red coloration which is not changed by the addition of diluted hydrochloric acid, but is discharged by the strong acid. One fluid ounce of this solution contains about 5½ grains, equal to about 1¼ per cent. of bimeconate of morphine ($C_{17}H_{19}NO_3,C_7H_4O_7$). The solution, as regards meconate of morphine, is about the same strength as tincture of opium.

Dose.—5 to 40 minims.

LIQUOR MORPHINÆ HYDROCHLORATIS.

Solution of Hydrochlorate of Morphine.[1]

Take of

Hydrochlorate of Morphine	9 grains	or	1 part
Diluted Hydrochloric Acid	18 minims	,,	2 fluid parts
Rectified Spirit	½ fluid ounce	,,	24 fluid parts
Distilled Water	1½ fluid ounce	,,	73 fluid parts

Mix the hydrochloric acid, the spirit, and the water, and dissolve the hydrochlorate of morphine in the mixture.

Dose.—10 to 60 minims.

LIQUOR PLUMBI SUBACETATIS.

Solution of Subacetate of Lead.

Subacetate of Lead, $Pb_2O(C_2H_3O_2)_2$, dissolved in water.

Take of

Acetate of Lead	5 ounces
Oxide of Lead, in powder	3½ ounces
Distilled Water	1 pint, or a sufficiency

Boil the acetate of lead and the oxide of lead in the water for half an hour, constantly stirring; then filter, and when the liquid is cold add to it more distilled water, until the product measures twenty fluid ounces. Keep the clear solution in stoppered bottles.

Characters and Tests.—A dense clear colourless liquid, with alkaline reaction and sweet astringent taste, becoming turbid by exposure to the air; and forming with mucilage of gum acacia an opaque white jelly. Sulphuric acid in excess gives a white precipitate, acetic acid being set free. Specific gravity 1·275. 284·5 grains by weight requires for perfect precipitation 500 grain-measures of the volumetric solution of oxalic acid, corresponding to 24 per cent. of the subacetate of lead, $Pb_2O(C_2H_3O_2)_2$.

Preparation.—Liquor Plumbi Subacetatis Dilutus.

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[1] The strength is about 1 in 100. It was about 1 in 109 in B. P. 1867.

LIQUOR PLUMBI SUBACETATIS DILUTUS.

Diluted Solution of Subacetatate of Lead.

Take of

Solution of Subacetate of Lead .	of each 2 fluid drachms .	or . 1 fluid part
Rectified Spirit .		
Distilled Water .	19½ fluid ounces	,, . 79 fluid parts

Mix, and filter through paper. Keep the clear solution in a stoppered bottle.

LIQUOR POTASSÆ.

Solution of Potash.

It may be prepared in the following manner:—

Take of

Carbonate of Potassium . . .	1 pound
Slaked Lime, washed	12 ounces
Distilled Water	1 gallon

Dissolve the carbonate of potassium in the water; and, having heated the solution to the boiling point in a clean iron vessel, gradually mix with it the washed slaked lime (obtained from about thirteen ounces of slaked lime washed with distilled water until a little of the washings, acidified with nitric acid, gives no cloudiness with nitrate of silver), and continue the ebullition for ten minutes with constant stirring. Then remove the vessel from the fire; and when by the subsidence of the insoluble matter the supernatant liquor has become perfectly clear, transfer it by means of a siphon to a green-glass bottle furnished with an air-tight stopper, and add distilled water, if necessary, to make it correspond with the tests of specific gravity and neutralising power.

Tests.—Specific gravity 1·058. 462·9 grains by weight (1 fluid ounce) requires for neutralisation 482 grain-measures of the volumetric solution of oxalic acid, corresponding to 5·84 per cent. by weight of hydrate of potassium, KHO. It does not effervesce when added to an excess of diluted hydrochloric acid. Mixed with an equal volume of distilled water, it gives no precipitate with solution of lime or oxalate of ammonium. When it is treated with an excess of diluted nitric acid, and evaporated to dryness, the residue forms with water a nearly clear solution, which may be slightly precipitated by chloride of barium and nitrate of silver but is unaffected, or but very slightly affected, by ammonia. Acidulated by hydrochloric acid, the solution is unaffected by sulphuretted hydrogen. One fluid ounce contains 27 grains of hydrate of potassium.

Dose.—15 to 60 minims.

LIQUOR POTASSÆ EFFERVESCENS.

Effervescing Solution of Potash.

Synonyms.—**Aqua Potassæ Effervescens; Potash Water.**

Take of

Bicarbonate of Potassium	30 grains
Water	1 pint

Dissolve the bicarbonate of potassium in the water and filter the solution; then force into it as much pure washed carbonic acid gas, obtained by the action of sulphuric acid on chalk, as can be introduced with a pressure of about four atmospheres. Keep the solution in bottles securely closed, to prevent the escape of the compressed gas.

Characters and Tests.—Effervesces strongly when the containing vessel is opened, carbonic acid gas escaping. The liquid is clear and sparkling, and has an agreeable acidulous taste. Ten fluid ounces, after being boiled for five minutes, requires for neutralisation 150 grain-measures of the volumetric solution of oxalic acid. Five fluid ounces, evaporated to one-fifth, and twelve grains of tartaric acid added, yields a crystalline precipitate, which when dried weighs not less than twelve grains.

LIQUOR POTASSII PERMANGANATIS.

Solution of Permanganate of Potassium.[1]

Take of

Permanganate of Potassium	88 grains	or	1 part
Distilled Water	1 pint	,,	99 fl. parts

Dissolve.

Dose.—2 to 4 fluid drachms.

LIQUOR SODÆ.

Solution of Soda.

It may be prepared in the following manner:—

Take of

Carbonate of Sodium	28 ounces
Slaked Lime, washed	12 ounces
Distilled Water	1 gallon

Dissolve the carbonate of sodium in the water; and, having heated the solution to the boiling point in a clean iron vessel, gradually mix with it the washed slaked lime (obtained from about 13 ounces of slaked lime washed with distilled water until a little of the washings, acidified with nitric acid, gives no cloudiness with nitrate of silver), and continue the ebullition for ten minutes with constant stirring. Then remove the vessel from the fire; and when by the subsidence of the insoluble matter, the supernatant liquor has become perfectly clear, transfer it by means of a siphon to a green-glass bottle furnished with an air-tight stopper, and add distilled water, if necessary, to make it correspond with the tests of specific gravity and neutralising power.

Tests.—Specific gravity 1·047. 458 grains by weight (1 fluid ounce) requires for neutralisation 470 grain-measures of the volumetric solution of oxalic acid, corresponding to 4·1 per cent. by weight of hydrate of sodium, NaHO. It does not effervesce when added to an excess of diluted hydrochloric acid. Mixed with an equal volume of distilled water, it gives no precipitate with solution of lime or oxalate of ammonium. When it is treated with an excess of diluted nitric acid and evaporated to dryness, the residue forms with water a clear solution which is only slightly precipitated by chloride of barium or by nitrate of silver, and not at all by ammonia. Acidified by hydrochloric acid, the solution is unaffected by sulphuretted hydrogen. One fluid ounce contains 18·8 grains of hydrate of sodium.

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[1] The strength is 1 in 100. It was 1 in 109 in B. P. 1867.

LIQUOR SODÆ CHLORINATÆ.

Solution of Chlorinated Soda.

Take of

Chlorinated Lime	16 ounces
Carbonate of Sodium	24 ounces
Distilled Water	1 gallon

Dissolve the carbonate of sodium in two pints of the distilled water; thoroughly triturate the chlorinated lime with six pints of the water, and filter; well mix the solutions; again filter. Keep the solution in a stoppered bottle in a cool and dark place.

Characters and Tests.—A colourless alkaline liquid, with astringent taste and feeble odour of chlorine. It decolorises sulphate of indigo. It is decomposed by hydrochloric acid, evolving chlorine and little or no carbonic acid gas. Specific gravity 1·054. Seventy grains by weight, added to a solution of twenty grains of iodide of potassium in four fluid ounces of water and acidulated with two fluid drachms of hydrochloric acid, requires, for the discharge of the brown colour which the mixture assumes, at least 500 grain-measures of the volumetric solution of hyposulphite of sodium, corresponding to about 2½ per cent. of available chlorine. The solution yields only a slight precipitate with oxalate of ammonium.

Dose.—10 to 20 minims.

Preparation.—Cataplasma Sodæ Chlorinatæ.

LIQUOR SODÆ EFFERVESCENS.

Effervescing Solution of Soda.

Synonyms.—Aqua Sodæ Effervescens; Soda Water.

Take of

Bicarbonate of Sodium	30 grains
Water	1 pint

Dissolve the bicarbonate of sodium in the water, and filter the solution; then force into it as much pure washed carbonic acid gas, obtained by the action of sulphuric acid on chalk, as can be introduced with a pressure of about four atmospheres. Keep the solution in bottles securely closed, to prevent the escape of the compressed gas.

Characters and Tests.—Effervesces strongly when the containing vessel is opened, carbonic acid gas escaping. The liquid is clear and sparkling, and has an agreeable acidulous taste. Ten fluid ounces, after being boiled for five minutes, requires for neutralisation 178 grain-measures of the volumetric solution of oxalic acid.

LIQUOR SODII ARSENIATIS.

Solution of Arseniate of Sodium.[1]

Take of

Arseniate of Sodium, rendered anhydrous by a temperature not exceeding 300° F. (148°·9 C.) .	9 grains	or . 1 part
Distilled Water . .	2 fluid ounces .	„ . 99 fl. parts

Dissolve.

Dose.—5 to 10 minims.

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[1] The strength is 1 in 100. It was 1 in 109 in B. P. 1867.

LIQUOR SODII ETHYLATIS.

Solution of Ethylate of Sodium.

Take of

Metallic Sodium, free from oxide	22 grains	or	1 part
Ethylic Alcohol	1 fluid ounce	„	20 fluid parts

Dissolve the sodium in the ethylic alcohol contained in a flask, the latter being kept cool in a stream of cold water. The solution should be recently prepared.

Characters and Tests.—A colourless liquid of syrupy consistence, becoming brown by keeping. Specific gravity 0·867. When heated it boils and gives off alcoholic vapours, leaving a white salt which, on being strongly heated, chars. If the white salt be mixed with water and heated, it yields alcohol, and the solution, on evaporation, leaves a white residue consisting almost wholly of caustic soda. Solution of ethylate of sodium contains 19 per cent. of the solid salt, NaC_2H_5O.

LIQUOR STRYCHNINÆ HYDROCHLORATIS.

Solution of Hydrochlorate of Strychnine.[1]

Synonym.—Liquor Strychniæ.

Take of

Strychnine, in crystals	9 grains	or	1 part
Diluted Hydrochloric Acid	14 minims	„	2 fluid parts
Rectified Spirit	½ fluid ounce	„	24 fluid parts
Distilled Water	1½ fluid ounce	„	73 fluid parts

Mix the hydrochloric acid with four drachms of the water, and dissolve the strychnine in the mixture by the aid of heat. Then add the spirit and the remainder of the water.

Dose.—5 to 10 minims.

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[1] The strength is about 1 in 100. It was about 1 in 109 in B. P. 1867.

LIQUOR ZINCI CHLORIDI.

Solution of Chloride of Zinc.

Take of

Granulated Zinc	1 pound
Hydrochloric Acid	44 fluid ounces
Solution of Chlorine	a sufficiency
Carbonate of Zinc	½ ounce, or a sufficiency
Distilled Water	1 pint

Mix the hydrochloric acid and water in a porcelain dish, add the zinc, and apply heat gently to promote the action until gas is no longer evolved. Boil for half an hour, supplying the water lost by evaporation, and allow the product to cool.

Test a few drops of the resulting liquid for iron or lead by adding excess of ammonia and then sulphydrate of ammonium, when a black precipitate is produced if either is present. In the latter case, filter the remainder of the product into a bottle, and add solution of chlorine by degrees, with frequent agitation, until the fluid acquires a permanent odour of chlorine. Add the carbonate of zinc, in small quantities at a time, and with renewed agitation, until a brown sediment appears and the whole of the iron or lead is thus precipitated. Filter the liquid into a porcelain basin, and evaporate until it is reduced to the bulk of two pints.

If no iron or lead be present, filter and evaporate to two pints at once.

Characters.—A colourless fluid of astringent and sweetish taste. Specific gravity 1·460. It should respond to the tests described under 'Zinci Chloridum.'

LITHII CARBONAS.

Carbonate of Lithium.

L_2CO_3.

Characters and Tests.—In white powder or in minute crystalline grains, alkaline in reaction, soluble in 150 parts of cold water, insoluble in alcohol. It dissolves with effervescence in hydrochloric acid; and the solution evaporated to dryness leaves a residue of chloride of lithium, which communicates a red colour to the flame of a spirit lamp, and redissolved in water yields a precipitate with phosphate of sodium. Ten grains of the salt neutralised with sulphuric acid and afterwards heated to redness leaves 14·86 grains of dry sulphate of lithium, which, when redissolved in distilled water, yields no precipitate with oxalate of ammonium or solution of lime.

Dose.—3 to 6 grains.

Preparations for which Carbonate of Lithium is used.

Liquor Lithiæ Effervescens	Lithii Citras

LITHII CITRAS.

Citrate of Lithium.

$L_3C_6H_5O_7,4H_2O$.

Synonyms.—Lithiæ Citras; Citrate of Lithia.

Take of

Carbonate of Lithium	50 grains
Citric Acid, in crystals	90 grains
Warm Distilled Water	1 fluid ounce

Dissolve the citric acid in the water, and add the carbonate of lithium in successive portions, applying heat until effervescence ceases, and a perfect solution is obtained. Evaporate by a steam or sand bath until the product has a specific gravity of about 1·230, and set aside for crystals to form. Dry the crystals and preserve them in a stoppered bottle.

Characters and Tests.—A white crystalline salt, soluble in water without leaving any residue. Heated to redness it blackens, evolving inflammable gases; and the residue, neutralised by hydrochloric acid, yields with rectified spirit a solution which burns with a crimson flame. Twenty grains of the salt dried at 212° F. (100° C.) lose about 3·8 grains, at 240° F. (115°·5 C.) an additional 1·3 grain, and when burned at a low red heat with free access of air, leave 7·8 grains of white residue.

Dose.—5 to 10 grains.

LOBELIA.

Lobelia.

The dried flowering herb of Lobelia inflata, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iii. plate 162.

Characters.—Usually in compressed oblong rectangular packages, weighing from half a pound to a pound each, and wrapped in sealed and labelled papers. The separate pieces are of varying lengths, yellowish-green, angular, and bearing sessile or stalked hairy oval irregularly toothed leaves, together with some flowers and fruits. Odour somewhat irritating; taste at first mild, but, after chewing, burning and acrid.

Preparations.

Tinctura Lobeliæ	54½ grains to 1 fluid ounce
,, ,, Ætherea	54½ grains to 1 fluid ounce

LOTIO HYDRARGYRI FLAVA.

Yellow Mercurial Lotion.

Take of

Perchloride of Mercury	18 grains	or 1 part
Solution of Lime	10 fluid ounces	,, 243 fluid parts

Mix.

LOTIO HYDRARGYRI NIGRA.

Black Mercurial Lotion.

Take of

Subchloride of Mercury	30 grains	or 1 part
Solution of Lime	10 fluid ounces	,, 146 fluid parts

Mix.

LUPULINUM.

Lupulin.

Synonym.—Lupulinic Glands.

A glandular powder obtained from the dried strobiles of Humulus Lupulus, *Linn.*

Characters and Tests.—A granular bright brownish-yellow powder, which, under the microscope, is seen to consist of minute, somewhat globular-top-shaped, reticulated, translucent, shining glands. It burns readily, and has the agreeable aromatic odour and taste of hop. On incineration it should not yield more than about 15 per cent. of ash. Not more than about 30 or 40 per cent. should be insoluble in ether.

Dose.—2 to 5 grains.

LUPULUS.

Hop.

Synonym.—Humulus.

The dried strobiles of Humulus Lupulus, *Linn.*, from plants cultivated in England; *Bentl. and Trim. Med. Pl.* vol. iv. plate 230.

Characters.—More or less compressed and broken in commercial specimens. When entire, about one inch and a quarter long; oblong-ovoid or rounded in form, and consisting of a number of thin greenish-yellow or brownish membranous imbricated scales or bracts; each of which has at its base a small rounded achene sprinkled over with brownish-yellow glands (lupulin), the whole being attached to a hairy undulated axis. Odour agreeably aromatic; taste bitter, aromatic, and feebly astringent.

Preparations.

Extractum Lupuli	
Infusum Lupuli . .	½ ounce to 10 fluid ounces
Tinctura Lupuli . .	2½ ounces to 1 pint

MAGNESIA LEVIS.

Light Magnesia.

Synonyms.—Light Calcined Magnesia; Oxide of Magnesium.

MgO.

Take of

Light Carbonate of Magnesium . .	4 ounces

Put it into a Cornish or Hessian crucible closed loosely by a lid, and expose it to a low red heat until a small quantity, taken from the centre of the crucible, cooled, moistened with water, and dropped into warm diluted sulphuric acid, causes no effervescence.

Characters.—A bulky white powder differing from the following preparation only in its greater lightness, the volumes corresponding to the same weight being to each other in the ratio of three and a half to one.

Dose.—10 to 60 grains.

Preparation.—Pulvis Rhei Compositus, 2 parts in 3.

MAGNESIA PONDEROSA.

Heavy Magnesia.

Synonyms.—Heavy Calcined Magnesia; Oxide of Magnesium.

MgO.

Take of

Heavy Carbonate of Magnesium . .	4 ounces

Put it into a Cornish or Hessian crucible closed loosely by a lid, and expose it to a low red heat until a small quantity, taken from the centre of the crucible, cooled, moistened with water, and dropped into warm diluted sulphuric acid, causes no effervescence.

Characters and Tests.—A white powder, insoluble in water, but readily dissolved by acids without effervescence. Its solution in hydrochloric acid, when neutralised by a mixed solution of ammonia and chloride of ammonium, gives a copious crystalline precipitate when phosphate of sodium is added. Dissolved in nitric acid, and neutralised with a mixture of ammonia and chloride of ammonium, it does not give any precipitate with oxalate of ammonium or chloride of barium.

Dose.—10 to 60 grains.

Preparation.—Pulvis Rhei Compositus, 2 parts in 3.

Preparations of Magnesium and its Compounds.

Enema Magnesii Sulphatis .	1 ounce Sulphate in 16 fluid ounces
Liquor Magnesii Carbonatis .	10 grains Carbonate in 1 fluid ounce
Magnesia Levis; Magnesia Ponderosa	
Magnesii Carbonas Levis; Magnesii Carbonas Ponderosa	
„ Sulphas	
Mistura Sennæ Composita .	1 ounce Sulphate in 5 fluid ounces
Pulvis Rhei Compositus .	6 parts Magnesia in 9
Trochisci Bismuthi . .	$2\frac{1}{2}$ grains Carbonate in each lozenge, nearly

MAGNESII CARBONAS LEVIS.

Light Carbonate of Magnesium.

Synonyms.—Magnesiæ Carbonas Levis; Light Carbonate of Magnesia.

$$(MgCO_3)_3,Mg(HO)_2,4H_2O.$$

Take of

Sulphate of Magnesium . . .	10 ounces
Carbonate of Sodium . . .	12 ounces
Distilled Water	a sufficiency

Dissolve the sulphate of magnesium and the carbonate of sodium each in half a gallon of the water, mix the two solutions cold, and boil the mixture in a porcelain dish for fifteen minutes. Transfer the precipitate to a calico filter, and pour upon it repeatedly boiling distilled water, until the washings cease to give a precipitate with chloride of barium. Lastly, dry by a temperature not exceeding 212° F. (100° C.)

Characters.—A very light powder, which, when examined under the microscope, is found to be partly amorphous with numerous slender prisms intermixed. The other characters and tests are the same as those of heavy carbonate of magnesium.

Dose.—10 to 60 grains.

Preparation in which Light Carbonate of Magnesium is used.

Vapor Olei Pini Sylvestris

MAGNESII CARBO[illegible]AS PONDEROSA.

Heavy Carbona[illegible] of Magnesium.

Synonyms.—**Magnesiæ Carbonas; Heavy Carbonate of Magnesia.**

$$(MgCO_3)_3,Mg(HO)_2,4H_2O.$$

Take of

Sulphate of Magnesium . . .	10 ounces
Carbonate of Sodium . . .	12 ounces
Boiling Distilled Water . . .	a sufficiency

Dissolve the sulphate of magnesium and the carbonate of sodium each in a pint of the water, mix the two solutions, and evaporate the whole to perfect dryness by means of a sand-bath. Digest the residue for half an hour with two pints of the water, and having collected the insoluble matter on a calico filter, wash it repeatedly with distilled water, until the washings cease to give a precipitate with chloride of barium. Finally, dry the product at a temperature not exceeding 212° F. (100° C.)

Characters and Tests.—A white granular powder, that dissolves readily with effervescence in the diluted mineral acids, yielding solutions which, when first treated with chloride of ammonium, are not disturbed by the addition of an excess of solution of ammonia, but yield a copious crystalline precipitate upon the addition of phosphate of sodium. With excess of hydrochloric acid it forms a clear solution in which chloride of barium causes no precipitate. Another portion of the solution supersaturated with ammonia gives no immediate precipitate with oxalic acid, and none with sulphuretted hydrogen. Fifty grains calcined at a red heat are reduced to twenty-two.

Dose.—10 to 60 grains.

Preparations containing Carbonate of Magnesium.

Liquor Magnesii Carbonatis .	10 grains in 1 fluid ounce
Trochisci Bismuthi . .	2½ grains in each lozenge, nearly

MAGNESII SULPHAS.

Sulphate of Magnesium.

Synonyms.—**Magnesiæ Sulphas; Sulphate of Magnesia; Epsom Salt.**

$MgSO_4,7H_2O$.

Characters and Tests.—In minute colourless and transparent rhombic prisms, possessing a bitter taste. It readily dissolves in water, and the solution gives copious white precipitates with chloride of barium and with a mixed solution of ammonia chloride of ammonium and phosphate of sodium. Its aqueous solution at ordinary temperatures is not precipitated by oxalate of ammonium, nor should it give a brown precipitate with chlorinated lime or soda. The precipitate given by carbonate of sodium, when obtained from a boiling solution of one hundred grains of the salt, should, when well washed, dried, and heated to redness, weigh 16·26 grains.

Dose.—60 grains to ½ ounce.

Preparations.

Enema Magnesii Sulphatis . 1 ounce in 16 fluid ounces
Mistura Sennæ Composita . 1 ounce in 5 fluid ounces

Preparations for which Sulphate of Magnesium is used.

Magnesii Carbonas Levis | Magnesii Carbonas Ponderosa

MANGANESII OXIDUM NIGRUM.

Black Oxide of Manganese.

MnO_2.

Characters and Tests.—A heavy black powder, which dissolves almost entirely in hydrochloric acid with evolution of chlorine, and gives off oxygen when heated to redness.

Used in producing chlorine and permanganate of potassium.

MANNA.

Manna.

A concrete saccharine exudation obtained by making transverse incisions in the stems of cultivated trees of Fraxinus Ornus, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iii. plate 170.

Characters and Tests.—In stalactitic pieces, varying in length and thickness, flat or concave on their inner surface ; of a pale yellowish-brown colour, irregularly convex, and nearly white externally. This manna, which is known as flake manna, is crisp, brittle, porous, crystalline in structure, and readily soluble in about six parts of water. Odour faint, resembling honey ; taste sweet and honey-like, combined with a slight acridity and bitterness. It consists principally of mannite, $C_6H_8(HO)_6$, together with common sugar and indefinite matter. The mannite, which forms from 60 to 80 per cent. of the manna, may be extracted by boiling with fifteen or sixteen parts of rectified spirit, from which it will afterwards separate on cooling in colourless, shining crystals ; it requires five parts of cold water for its solution, and this does not undergo vinous fermentation in contact with yeast. Manna contains about ten per cent. of moisture.

Dose.—60 grains to 1 ounce.

MARMOR ALBUM.

White Marble.

$CaCO_3$.

Hard white crystalline native carbonate of calcium, in masses.

Used in producing carbonic acid gas.

MASTICHE.

Mastich.

A concrete resinous exudation obtained by making incisions in the bark of the stem and large branches of Pistacia Lentiscus, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. i. plate 68.

Characters.—In rounded, irregular, oblong, or pear-shaped tears, of a pale yellow colour, and either opaque and dusty on their outer surface, or far more frequently having a glassy and transparent appearance; brittle, and breaking with a vitreous, conchoidal, pale-yellow fracture. Odour agreeable, somewhat balsamic and terebinthinous; taste mild and resinous. Becoming plastic when chewed; entirely soluble in ether.

MATICÆ FOLIA.

Matico Leaves.

The dried leaves of Piper angustifolium, *Ruiz and Pavon* (Artanthe elongata, *Miq.*); *Bentl. and Trim. Med. Pl.* vol. iv. plate 242.

Characters.—From about four to eight inches long, oblong-lanceolate, tapering towards the apex, cordate and unequal at the base, entire or minutely crenulate, greenish-yellow, very shortly petiolate, reticulated with sunken veins and tessellated above, the veins prominent beneath, and the depressions formed by them densely clothed with hairs. Taste aromatic, bitterish; odour pleasant, feebly aromatic. The leaves as commonly seen in commerce are more or less broken, folded, and compressed into a brittle mass, and have mixed with them a variable proportion of the jointed stems, flowers, and fruit.

Preparation.—Infusum Maticæ, 1 ounce to 1 pint.

MEL.

Honey.

A saccharine secretion deposited in the honeycomb by Apis mellifica, *Linn.*

Characters and Tests.—When recently separated from the honeycomb, it is a viscid translucent liquid, of a light yellowish or brownish-yellow colour, which gradually becomes partially crystalline and opaque. It has a peculiar odour, and a very sweet characteristic taste. Boiled with water for five minutes and allowed to cool, it does not become blue with the solution of iodine. Incinerated it should not yield more than 0·2 per cent. ash, the solution of which in water acidulated with nitric acid should not afford more than a slight turbidity with solution of chloride of barium.

Preparation.—Mel Depuratum.

MEL BORACIS.

Borax Honey.

Take of

Borax, in fine powder	60 grains	or	2 parts
Glycerine	30 grains	,,	1 part
Clarified Honey	480 grains	,,	16 parts

Mix.

MEL DEPURATUM.

Clarified Honey.

Take of

Honey	5 pounds

Melt the honey in a water-bath, and strain, while hot, through flannel, previously moistened with warm water.

Preparations.

Confectio Piperis	15 parts in 20
,, Scammonii	1 part in 6, nearly
,, Terebinthinæ	1 part in 2, nearly
Mel Boracis	8 parts in 9, nearly
Oxymel	40 parts in 50
,, Scillæ	

MENTHOL.

$C_{10}H_{20}O$.

A stearoptene obtained by cooling the oil distilled from the fresh herb of Mentha arvensis, *DC.*, vars. piperascens et glabrata; and of Mentha piperita, *Sm.*

Characters and Tests.—In colourless acicular crystals, usually more or less moist from adhering oil; or in fused crystalline masses. Its melting-point should not exceed 110° F. (43·3° C.) The hardest masses do not melt below 108° F. (42·2° C.) It has the odour and flavour of peppermint, producing warmth on the tongue, or, if air is inhaled, a sensation of coolness. It is sparingly soluble in water, and readily soluble in rectified spirit, the solutions having a neutral reaction. Boiled with sulphuric acid diluted with half its volume of water, menthol acquires an indigo-blue or ultramarine colour, the acid becoming brown. It should entirely be dissipated by the heat of a water-bath.

Dose.—½ to 2 grains.

MEZEREI CORTEX.

Mezereon Bark.

The dried bark of Daphne Mezereum, *Linn.*; or of Daphne Laureola, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iii. plates 225 and 226.

Characters.—In long thin more or less flattened strips, which are commonly folded or rolled into disks; or in small quills of various lengths. Inner surface whitish, silky, very tough, and covered externally by an olive-brown or somewhat reddish-brown, readily separable corky layer. No marked odour; taste burning and acrid.

Preparations.

Decoctum Sarsæ Compositum .	55 grains to 1 pint
Extractum Mezerei Æthereum	

MICA PANIS.

Crumb of Bread.

The soft part of bread made with wheaten flour.

Preparation.—Cataplasma Carbonis.

MISTURA AMMONIACI.

Ammoniacum Mixture.

Take of

Ammoniacum, in coarse powder	¼ ounce . or	. 1 part
Distilled Water . . .	8 fl. oz. . ,,	. 32 fl. parts

Triturate the ammoniacum thoroughly with a little water into a thin paste; gradually add more water until the mixture assumes a uniform milky appearance; then strain through muslin.

Dose.—½ to 1 fluid ounce.

MISTURA AMYGDALÆ.

Almond Mixture.

Take of

Compound Powder of Almonds .	2 oz. . . . or	. 1 part
Distilled Water . . .	16 fl. oz. . ,,	. 8 fl. parts

Rub the powder with a little of the water into a thin paste, then add the remainder of the water, and strain through muslin.

Dose.—1 to 2 fluid ounces.

MISTURA CREASOTI.

Creasote Mixture.

Take of

Creasote . . .	15 minims . . . or	. 1 fluid part
Glacial Acetic Acid .	15 minims . . . ,,	. 1 fluid part
Spirit of Juniper .	½ fluid drachm . ,,	. 2 fluid parts
Syrup . . .	1 fluid ounce . . ,,	. 32 fluid parts
Distilled Water . .	15 fluid ounces . ,,	. 480 fluid parts

Mix the creasote with the acetic acid, gradually add the water, and lastly the syrup and spirit of juniper.

Dose.—1 to 2 fluid ounces.

MISTURA CRETÆ.

Chalk Mixture.

Take of

Prepared Chalk	¼ ounce	or	1 part
Gum Acacia, in powder	¼ ounce	,,	1 part
Syrup	½ fluid ounce	,,	2 fluid parts
Cinnamon Water	7½ fluid ounces	,,	30 fluid parts

Triturate the chalk and gum acacia with the cinnamon water, then add the syrup, and mix.

Dose.—1 to 2 fluid ounces.

MISTURA FERRI AROMATICA.

Aromatic Mixture of Iron.

Take of

Red Cinchona Bark, in powder	1 ounce
Calumba Root, in coarse powder	½ ounce
Cloves, bruised	¼ ounce
Fine Iron Wire	½ ounce
Compound Tincture of Cardamoms	3 fluid ounces
Tincture of Orange Peel	½ fluid ounce
Peppermint Water	a sufficiency

Macerate the cinchona bark, calumba root, cloves, and iron, with twelve fluid ounces of the peppermint water, in a closed vessel for three days, agitating occasionally; then filter the liquid, adding as much peppermint water to the filter as will make the product measure twelve and a half fluid ounces; to this add the tinctures, and preserve the mixture in a well-stoppered bottle.

Dose.—1 to 2 fluid ounces.

MISTURA FERRI COMPOSITA.

Compound Mixture of Iron.

Take of

Sulphate of Iron		25 grains
Carbonate of Potassium		30 grains
Myrrh Refined Sugar	of each	60 grains
Spirit of Nutmeg		4 fluid drachms
Rose Water		9½ fluid ounces

Reduce the myrrh to powder, add the carbonate of potassium and sugar, and triturate them with a small quantity of the rose water so as to form a thin paste; then gradually add more rose water and the spirit of nutmeg, continuing the trituration and further addition of rose water until about eight fluid ounces of a milky liquid is formed; then add the sulphate of iron dissolved in the remainder of the rose water; mix thoroughly, and preserve the mixture as much as possible from contact with air.

Dose.—1 to 2 fluid ounces.

MISTURA GUAIACI.

Guaiacum Mixture.

Take of

Guaiacum Resin Refined Sugar	of each	½ ounce	or	1 part
Gum Acacia, powdered		¼ ounce	,,	½ part
Cinnamon Water		1 pint	,,	40 fluid parts

Triturate the guaiacum with the sugar and the gum, adding gradually the cinnamon water.

Dose.—½ to 2 fluid ounces.

MISTURA SCAMMONII.

Scammony Mixture.

Take of

Scammony, in powder	6 grains	or	1 part
Milk	2 fluid ounces	,,	146 fluid parts

Triturate the scammony with the milk, until a uniform emulsion is obtained. The mixture should be made as required for use.

Dose.—1 to 3 fluid ounces.

MISTURA SENNÆ COMPOSITA.

Compound Mixture of Senna.

Synonym.—Black Draught.

Take of

Sulphate of Magnesium	4 ounces	or	4 parts
Liquid Extract of Liquorice	1 ounce	,,	1 fl. part
Tincture of Senna	2½ fl. oz.	,,	2½ fl. parts
Compound Tincture of Cardamoms	1½ fl. oz.	,,	1½ fl. parts
Infusion of Senna	15 fl. oz.	,,	15 fl. parts

Dissolve the sulphate of magnesium in the infusion of senna with the aid of a little heat, then add the liquid extract and the tinctures.

Dose.—1 to 1½ fluid ounce.

MISTURA SPIRITUS VINI GALLICI.

Mixture of French Brandy.

Take of

French Brandy Cinnamon Water	of each	4 fluid ounces
The Yolks of Two Eggs		
Refined Sugar		½ ounce

Rub the yolks and sugar together, then add the cinnamon water and spirit.

Dose.—1 to 2 fluid ounces.

MORI SUCCUS.

Mulberry Juice.

The juice of the ripe fruit of Morus nigra, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iv. plate 229.

Characters.—Of a dark violet or purple colour, with a faint odour, and a refreshing acidulous saccharine taste. Specific gravity about 1·060.

Preparation.—Syrupus Mori.

MORPHINÆ ACETAS.

Acetate of Morphine.

Synonyms.—Morphiæ Acetas; Acetate of Morphia.

$C_{17}H_{19}NO_3,HC_2H_3O_2,3H_2O.$

Take of

Hydrochlorate of Morphine . . .	2 ounces
Solution of Ammonia Acetic Acid . . Distilled Water . } of each . .	a sufficiency

Dissolve the hydrochlorate of morphine in one pint of distilled water, and add solution of ammonia until the morphine is precipitated and the liquid rendered slightly alkaline. Collect the precipitate on a filter, wash it with distilled water, then having transferred it to a porcelain dish, add four ounces of distilled water and a sufficient quantity of acetic acid to neutralise and dissolve it. Evaporate the solution by the heat of a water-bath, maintaining acetic acid in slight excess, until it concretes on cooling. Lastly, dry the salt with slight heat, so as to avoid much loss of acetic acid, and reduce it to powder. Keep the product in a well-stoppered bottle.

Acetate of morphine may also be prepared from acetic acid and the pure morphine obtained direct from opium, as described in connection with 'Morphinæ Hydrochloras.'

Characters and Tests.—A white powder, almost entirely soluble in two and a half parts of water at common temperatures; readily soluble in spirit. From its solution potash throws down a precipitate which is dissolved by excess of the alkali. Ignited with free access of air, it leaves no residue. It is affected by nitric acid and perchloride of iron in the same way as hydrochlorate of morphine. When sulphuric acid is added to the salt, acetous vapours are evolved. Twenty grains of the salt forms with one drachm of water a slightly turbid solution, which is rendered clear by the addition of one grain of acetic acid; and this solution when mixed with ammonia in slight excess yields a precipitate which, after washing with a little cold water and drying in a water-bath, weighs fifteen grains. If the salt yield a larger proportion of morphine than this, it should be recrystallised from hot water acidulated with acetic acid.

Dose.—$\frac{1}{8}$ to $\frac{1}{2}$ grain.

Preparations.

Injectio Morphinæ Hypodermica .	1 grain in 10 minims
Liquor Morphinæ Acetatis . .	1 grain in 100 fluid grains

MORPHINÆ HYDROCHLORAS.

Hydrochlorate of Morphine.

Synonyms.—Morphiæ Murias; Morphiæ Hydrochloras; Hydrochlorate of Morphia.

$C_{17}H_{19}NO_3,HCl,3H_2O.$

It may be obtained by the following process:—

Take of

Opium, sliced	1 pound
Chloride of Calcium	$\frac{3}{4}$ ounce
Purified Animal Charcoal . . .	$\frac{1}{4}$ ounce
Diluted Hydrochloric Acid . .	2 fluid ounces, or a sufficiency
Solution of Ammonia Distilled Water . } of each .	a sufficiency

Macerate the opium for twenty-four hours with two pints of the water, and decant. Macerate the residue for twelve hours with two pints of the water, decant, and repeat the process with the same quantity of the water, subjecting the insoluble residue to strong pressure. Unite the liquors, evaporate in a water-bath to the bulk of one pint, and strain through calico. Pour in now the chloride of calcium previously dissolved in four fluid ounces of distilled water, and evaporate until the solution is so far concentrated that upon cooling it becomes solid. Envelope the mass in a double fold of strong calico, and subject it to powerful pressure, preserving the dark fluid which exudes. Triturate the squeezed cake with about half a pint of boiling distilled water, and, the whole being thrown upon a paper filter, wash the residue well with boiling distilled water. The filtered fluids having been evaporated as before, cooled, and solidified, again subject the mass to pressure; and, if it be still much coloured, repeat this process a third time, the expressed liquids being always preserved. Dissolve the pressed cake in six fluid ounces of boiling distilled water; add the animal charcoal, and digest for twenty minutes; filter, wash the filter and charcoal with boiling distilled water, and to the solution thus obtained add the solution of ammonia in slight excess. Let the pure crystalline morphine which separates as the liquid cools be collected on a paper filter, and washed with cold distilled water until the washings cease to give a precipitate with solution of nitrate of silver acidulated by nitric acid.

From the dark liquids expressed in the above process an additional product may be obtained by diluting them with distilled water, precipitating with solution of potash added in considerable excess, filtering, and supersaturating the filtrate with hydrochloric acid. This acid liquid digested with a little animal charcoal, and again filtered, gives upon the addition of ammonia a small quantity of pure morphine.

Diffuse the pure morphine, obtained as above, through two fluid ounces of boiling distilled water placed in a porcelain capsule kept hot, and add, constantly stirring, the diluted hydrochloric acid, proceeding with caution, so that the morphine may be entirely dissolved and a neutral solution be obtained. Set aside to cool and crystallise. Drain the crystals, and dry them on filtering paper. By further evaporating the mother liquor, and again cooling, additional crystals are obtained.

Characters and Tests.—In white powder or thin prisms of a silky lustre, not changed by exposure to the air, and soluble in twenty-four parts of water at common temperatures; readily soluble in spirit. The aqueous solution gives a white curdy precipitate with nitrate of silver, and a white one with potash, which is redissolved when an excess of the alkali is added. Moistened with strong nitric acid it becomes orange-red, and, with solution of perchloride of iron, greenish-blue. Warmed with strong sulphuric acid and a little arseniate of sodium, a bluish-green tinge results. Ignited with free access of air, it burns without leaving any residue. Twenty grains of the salt dissolved in half an ounce of warm water, with ammonia added in the slightest possible excess, gives on cooling a crystalline precipitate which, when washed with a little cold water, and dried in a water-bath, weighs 16 grains.

Dose.—$\frac{1}{8}$ to $\frac{1}{2}$ grain.

Preparations.

Liquor Morphinæ Hydrochloratis	1 grain in 100 fluid grains
Suppositoria Morphinæ . .	$\frac{1}{2}$ grain to each suppository
,, ,, cum Sapone	$\frac{1}{2}$ grain to each suppository
Tinctura Chloroformi et Morphinæ	1 grain in 1 fluid ounce
Trochisci Morphinæ . . .	$\frac{1}{36}$ grain in each lozenge
,, ,, et Ipecacuanhæ	$\frac{1}{36}$ grain in each lozenge

MORPHINÆ SULPHAS.

Sulphate of Morphine.

$(C_{17}H_{19}NO_3)_2,H_2SO_4,5H_2O.$

Synonyms.—**Morphiæ Sulphas; Sulphate of Morphia.**

This salt is prepared by diffusing the morphine of the previous process in about twice its weight of boiling distilled water, and adding to the fluid, kept hot, diluted sulphuric acid, gradually and with constant stirring, so that the morphine may be entirely dissolved, and a neutral solution be obtained. Set aside to cool and crystallise. Drain the crystals, and dry them on filtering paper. By further evaporating the mother liquor, and again cooling, additional crystals are obtained.

Characters and Tests.—Colourless, silky, acicular crystals; soluble in twenty-four parts of water at common temperatures; sparingly soluble in rectified spirit. From its solution potash gives a precipitate which is soluble in excess, chloride of barium a white precipitate insoluble in hot hydrochloric acid. Moistened with strong nitric acid, it becomes orange-red; and, with solution of perchloride of iron, greenish-blue.

Dose.—⅛ to ½ grain.

MOSCHUS.

Musk.

The dried secretion from the preputial follicles of Moschus moschiferus, *Linn.*

Characters and Test.—In irregular somewhat unctuous grains of a dark reddish-brown or reddish-black colour, a very strong peculiar diffusible penetrating persistent odour, and a bitterish taste; contained in a roundish or oval sac, from about one and a half to two inches in diameter, which is nearly smooth on one side, and covered on the other or outer side by brownish-yellow or greyish adpressed bristle-like hairs, concentrically arranged around a nearly central orifice. It should be free from earthy impurities.

Dose.—5 to 10 grains.

MUCILAGO ACACIÆ.

Mucilage of Gum Acacia.

Take of

Gum Acacia, in small pieces	4 ounces	or .	2 parts
Distilled Water . .	6 fluid ounces .	,, .	3 fluid parts

Put the gum and water into a covered earthen jar, and stir them frequently until the gum is dissolved. If necessary strain the solution through muslin.

Preparations.

Trochisci Acidi Tannici
,, Bismuthi
,, Catechu
,, Ferri Redacti
,, Ipecacuanhæ

Trochisci Morphinæ
,, ,, et Ipecacuanhæ
,, Potassii Chloratis
,, Santonini

Trochisci Sodii Bicarbonatis

MUCILAGO AMYLI.

Mucilage of Starch.

Take of

Starch . .	120 grains	or . .	24 parts
Distilled Water	10 fluid ounces . .	,, . .	875 fluid part

Triturate the starch with the water, gradually added, the boil for a few minutes, constantly stirring.

Preparations.

Enema Aloes
,, Magnesii Sulphatis

Enema Opii
,, Terebinthinæ

MUCILAGO TRAGACANTHÆ.

Mucilage of Tragacanth.

Take of

Tragacanth, in powder . .	60 grains	or . .	12 parts
Distilled Water .	10 fluid ounces . .	,, . .	875 fluid parts
Rectified Spirit .	2 fluid drachms . .	,, . .	22 fluid parts

Mix the tragacanth with the spirit; then pour in the water, with constant agitation.

MYRISTICA.

Nutmeg.

The dried seed of Myristica fragrans, *Houtt.* (Myristica officinalis, *Linn.*), divested of its hard coat or shell; *Bentl. and Trim. Med. Pl.* vol. iii. plate 218.

Characters.—Oval or roundish, varying in length, but rarely exceeding an inch, greyish-brown externally, and marked with reticulated furrows; internally greyish-red with darker brownish-red veins, so that the transverse section has a marbled appearance. Odour strong and pleasantly aromatic; taste agreeably aromatic, warm, and bitterish.

Preparations.

Oleum Myristicæ	
„ „ Expressum	
Pulvis Catechu Compositus .	. 1 part in 10
„ Cretæ Aromaticus .	. 1 part in 16, nearly
Spiritus Armoraciæ Compositus .	$\frac{1}{2}$ ounce to 1 gallon
Tinctura Lavandulæ Composita .	75 grains to 1 pint

MYRRHA.

Myrrh.

A gum-resinous exudation obtained from the stem of Balsamodendron Myrrha, *Nees*; *Bentl. and Trim. Med. Pl.* vol. i. plate 60.

Characters.—In roundish or irregular-formed tears or masses of agglutinated tears, varying very much in size; reddish-brown or reddish-yellow externally, dry, and more or less covered by a fine powder; brittle, fractured surface irregular, somewhat translucent, rich brown, oily, and frequently marked with opaque whitish spaces or striæ. Odour agreeable, aromatic; taste aromatic, bitter, and acrid.

Preparations.

Decoctum Aloes Compositum	2·2 grains to 1 fluid ounce
Mistura Ferri Composita	6 grains to 1 fluid ounce
Pilula Aloes et Myrrhæ	1 part in 6
,, Asafœtidæ Composita	1 part in 3½
,, Rhei Composita	1 part in 8, nearly
Tinctura Myrrhæ	54½ grains to 1 fluid ounce

NECTANDRÆ CORTEX.

Bebeeru Bark.

The dried bark of Nectandra Rodiæi, *Schomb.*; *Bentl. and Trim. Med. Pl.* vol. iii. plate 219.

Characters.—In flattish heavy pieces, from one to two feet long, two to six inches broad, and a quarter of an inch or more thick. Externally greyish-brown, internally dark cinnamon-brown, and with evident longitudinal striæ. It is very hard and brittle, and its fractured surface presents a coarse-grained appearance. Inodorous, but with a strong bitter astringent taste.

Preparation.—Beberinæ Sulphas.

NUX VOMICA.

Nux Vomica.

The seeds of Strychnos Nux-vomica, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iii. plate 178.

Characters.—Rounded in outline, from about seven-eighths of an inch to more than an inch in diameter, and on an average nearly a quarter of an inch thick; flattish or concavo-convex, or sometimes more or less bent or irregular in form, rounded or somewhat acute at the margin; marked on one surface by a central scar or hilum, from which a more or less projecting line passes to the margin, where it terminates in a slight prominence. Externally ash-grey or yellowish-grey-green, and glistening from being covered with short satiny hairs; internally horny, and somewhat translucent; no odour, but an extremely bitter taste.

Preparations.

Extractum Nucis Vomicæ	15 per cent. of alkaloids
Strychnina	
Tinctura Nucis Vomicæ	1 grain of alkaloids in 1 fluid ounce

OLEATUM HYDRARGYRI.

Oleate of Mercury.

Take of

Yellow Oxide of Mercury	1 ounce	or	1 part
Oleic Acid	9 ounces	,,	9 parts

To the oleic acid kept stirred in a mortar add gradually the oxide of mercury, and triturate occasionally until it is all dissolved.

Characters.—A light-brown, oleaginous, semi-solid substance composed of oleate of mercury and oleic acid, and having the usual slight smell of oleic acid. Gently warmed, no black precipitate separates. Heated with a piece of copper foil, the latter becomes coated with a film of metallic mercury.

This oleate may be prepared with half the above proportion of oleic acid, the remainder being added just before, or not long before, the oleate is dispensed.

OLEATUM ZINCI.

Oleate of Zinc.

Take of

Oxide of Zinc	1 ounce	or	1 part
Oleic Acid	9 ounces	,,	9 parts

Stir the oxide with the oleic acid, and allow the mixture to stand for two hours; then heat on a water-bath until the oxide is dissolved.

Preparation.—Unguentum Zinci Oleati.

OLEO-RESINA CUBEBÆ.

Oleo-Resin of Cubebs.

Take of

Cubebs, in coarse powder	2 pounds
Ether	4 pints, or a sufficiency

Pack the cubebs closely in a percolator and pass the ether slowly through the mass until the liquor passes colourless. Let the ether evaporate from the liquor at first spontaneously and then over a water-bath, or recover it by distillation; and transfer the residue to a closed vessel, letting it stand until waxy or crystalline matter ceases to be deposited. Decant the oleo-resin and preserve it in a well-stoppered bottle.

Dose.—5 to 30 minims.

OLEUM AMYGDALÆ.

Almond Oil.

The oil expressed from the bitter or sweet almond.

Characters.—Thin, pale yellow, nearly inodorous, with a bland oleaginous nutty taste.

Preparations.

Oleum Phosphoratum
Unguentum Cetacei
,, Resinæ
,, Simplex, and the preparations containing it

OLEUM ANETHI.

Oil of Dill.

The oil distilled in Britain from dill fruit.

Characters.—Colour pale yellow, odour pungent, taste hot and sweetish.

Dose.—1 to 4 minims.

OLEUM ANISI.

Oil of Anise.

The oil distilled in Europe from anise fruit; or in China from star-anise fruit.

Characters.—Colourless or very pale yellow; with the odour of the fruit, and an aromatic sweetish taste. The ordinary oil of anise congeals at temperatures between 50° and 60° F. (10° to 15°·5 C.), and may remain solid at 62° or 63° F. (16°·7 to 17°·2 C.); oil of star-anise only becomes solid at a few degrees above the freezing point of water.

Dose.—1 to 4 minims.

Preparations.

Essentia Anisi	1 volume in 5
Tinctura Camphoræ Composita .	½ fluid drachm in 1 pint
,, Opii Ammoniata . .	1 fluid drachm in 1 pint

OLEUM ANTHEMIDIS.

Oil of Chamomile.

The oil distilled in Britain from chamomile flowers.

Characters.—Pale blue or greenish-blue, but gradually becoming yellowish-brown; with the peculiar aromatic taste and odour of the flowers.

Dose.—1 to 4 minims.

Preparation.—Extractum Anthemidis.

OLEUM CAJUPUTI.

Oil of Cajuput.

The oil distilled from the leaves of Melaleuca minor, *Sm.* (Melaleuca Cajuputi, *Roxb.*); *Bentl. and Trim. Med. Pl.* vol. ii. plate 108.

Characters.—A transparent limpid very volatile pale bluish-green liquid, with a strong penetrating agreeable camphoraceous odour, and a warm bitterish aromatic camphoraceous taste succeeded by a sensation of coldness in the mouth.

Dose.—1 to 4 minims.

Preparations.

Linimentum Crotonis . . .	3½ volumes in 8
Spiritus Cajuputi . . .	1 volume in 50

OLEUM CARUI.

Oil of Caraway.

The oil distilled in Britain from caraway fruit.

Characters.—Colourless or pale yellow when recent, but gradually becoming darker, with the odour of the fruit, and a spicy somewhat acrid taste.

Dose.—1 to 4 minims.

Preparations.

Confectio Scammonii .	2 parts in 150, nearly
Pilula Aloes Barbadensis .	1 fluid drachm in 4 ounces

OLEUM CARYOPHYLLI.

Oil of Cloves.

The oil distilled in Britain from cloves.

Characters.—Colourless or pale yellow when recent, but gradually becoming reddish-brown, having in a high degree the odour and taste of cloves. Sinks in water.

Dose.—1 to 4 minims.

Preparations.

Confectio Scammonii . .	1 part in 150, nearly
Pilula Colocynthidis Composita	20 minims in 1 ounce, nearly
,, ,, et Hyoscyami . . .	20 minims in 1½ ounce, nearly

OLEUM CINNAMOMI.

Oil of Cinnamon.

The oil distilled from cinnamon bark.

Characters.—Yellowish when recent, but gradually becoming cherry-red, having the odour and taste of cinnamon bark. Sinks in water.

Dose.—1 to 4 minims.

Preparation.—Spiritus Cinnamomi.

OLEUM COPAIBÆ.

Oil of Copaiva.

The oil distilled from copaiva.

Characters.—Colourless or pale yellow, with the odour and taste of copaiva.

Dose.—5 to 20 minims.

OLEUM CORIANDRI.

Oil of Coriander.

The oil distilled in Britain from coriander fruit.

Characters.—Pale yellow or colourless, having the odour of the fruit and a mild aromatic taste.

Dose.—1 to 4 minims.

Preparation.—Syrupus Sennæ.

OLEUM CROTONIS.

Croton Oil.

The oil expressed in Britain from the seeds of Croton Tiglium, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iv. plate 239.

Characters.—Brownish-yellow to dark reddish-brown, fluorescent, with a viscid consistence which is increased by age, a faint, peculiar, somewhat rancid, disagreeable odour, and an oily acrid taste. Entirely soluble in alcohol.

Dose.—$\frac{1}{2}$ to 1 minim.

Preparation.—Linimentum Crotonis, 1 volume in 8.

OLEUM CUBEBÆ.

Oil of Cubebs.

The oil distilled in Britain from cubebs.

Characters.—Colourless or greenish-yellow, with the odour and taste of cubebs.

Dose.—5 to 20 minims.

OLEUM EUCALYPTI.

Oil of Eucalyptus.

The oil distilled from the fresh leaves of Eucalyptus Globulus, *Labill.*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 109; Eucalyptus amygdalina, *Labill.*; and probably other species of Eucalyptus.

Characters and Tests.—Colourless, or pale straw-coloured, becoming darker and thicker by exposure. It has an aromatic odour, and a spicy and pungent flavour, leaving a sensation of coldness in the mouth. It is neutral to litmus paper. Specific gravity about 0·900. Soluble in about an equal weight of alcohol.

Dose.—1 to 4 minims.

Preparation.—Unguentum Eucalypti.

OLEUM JUNIPERI.

Oil of Juniper.

The oil distilled in Britain from the full-grown unripe green fruit of Juniperus communis, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iv. plate 255.

Dose.—1 to 4 minims.

Characters.—Colourless or pale greenish-yellow, with the characteristic odour of the fruit, and a warm aromatic taste.

Preparation.—Spiritus Juniperi, 1 volume in 50.

OLEUM LAVANDULÆ.

Oil of Lavender.

The oil distilled in Britain from the flowers of Lavandula vera, *DC.*; *Bentl. and Trim. Med. Pl.* vol. iii. plate 199.

Characters.—Pale yellow or nearly colourless, with the very fragrant odour of the flowers, and a hot bitter aromatic taste.

Dose.—1 to 4 minims.

Preparations.

Linimentum Camphoræ Compositum .	60 minims in 1 pint
Spiritus Lavandulæ	1 volume in 50
Tinctura Lavandulæ Composita . .	45 minims in 1 pint

OLEUM LIMONIS.

Oil of Lemon.

A volatile oil obtained by mechanical means from fresh lemon peel.

Characters.—Pale yellow, with a very fragrant odour, and a warm bitterish aromatic taste.

Dose.—1 to 4 minims.

Preparations.

Linimentum Potassii Iodidi cum Sapone	1 fluid drachm to 14 fluid ounces
Spiritus Ammoniæ Aromaticus	

OLEUM LINI.

Linseed Oil.

The oil expressed in Britain without heat from linseed.

Characters.—Viscid, yellow, with a faint odour, and bland oleaginous taste. It gradually thickens by exposure to the air.

OLEUM MENTHÆ PIPERITÆ.
Oil of Peppermint.

The oil distilled in Britain from fresh flowering peppermint, Mentha piperita, *Sm.*; *Bentl. and Trim. Med. Pl.* vol. iii. plate 203.

Characters.—Colourless, pale yellow, or greenish-yellow when recent, but becoming gradually thicker and reddish by age, with the odour of peppermint, and a strong penetrating aromatic taste, followed by a sensation of coldness in the mouth.

Dose.—1 to 4 minims.

Preparations.

Aqua Menthæ Piperitæ .	$1\frac{1}{2}$ fluid drachm to 1 gallon
Essentia Menthæ Piperitæ .	1 volume in 5
Pilula Rhei Composita .	1 minim in 1 drachm, nearly
Spiritus Menthæ Piperitæ .	1 volume in 50
Tinctura Chloroformi et Morphinæ . . .	1 minim in 2 fluid ounces

OLEUM MENTHÆ VIRIDIS.
Oil of Spearmint.

The oil distilled in Britain from fresh flowering spearmint, Mentha viridis, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iii. plate 202.

Characters.—Colourless, pale yellow, or greenish-yellow when recent, but becoming reddish by age, with the odour and taste of the herb.

Dose.—1 to 4 minims.

Preparation.

Aqua Menthæ Viridis . .	$1\frac{1}{2}$ fluid drachm to 1 gallon

OLEUM MORRHUÆ.
Cod-liver Oil.

The oil extracted from the fresh liver of the cod, Gadus Morrhua, *Linn.*, by the application of a heat not exceeding 180° F. (82°·2 C.)

Characters and Test.—Pale yellow, with a slight fishy odour, and bland fishy taste. A drop of sulphuric acid added to a few drops of the oil on a porcelain slab developes a violet colour, which soon passes to a yellowish or brownish red.

Dose.—1 to 8 fluid drachms.

OLEUM MYRISTICÆ.

Volatile Oil of Nutmeg.

The oil distilled in Britain from nutmeg.

Characters.—Colourless or straw-yellow, having the odour and taste of nutmeg.

Dose.—1 to 4 minims.

Preparations.

Pilula Aloes Socotrinæ	
Spiritus Ammoniæ Aromaticus .	1 in 300, about
,, Myristicæ . . .	1 volume in 50

OLEUM MYRISTICÆ EXPRESSUM.

Expressed Oil of Nutmeg.

Synonym.—Myristicæ Adeps.

A concrete oil obtained by means of expression and heat from nutmeg.

Characters.—Orange-brown or orange-yellow, more or less mottled, firm consistence, and fragrant odour like that of nutmeg.

Preparations.

Emplastrum Calefaciens | Emplastrum Picis

OLEUM OLIVÆ.

Olive Oil.

The oil expressed from the ripe fruit of Olea europæa, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iii. plate 172.

Characters.—Pale yellow or greenish-yellow, with a very faint agreeable odour, and a bland oleaginous taste; congeals partially at about 36° F. (2°·2 C.)

Preparations.

Charta Epispastica
Emplastrum Ammoniaci cum Hydrargyro
,, Hydrargyri
,, Picis
,, Plumbi
,, Saponis Fuscum
Enema Magnesii Sulphatis
Linimentum Ammoniæ
,, Calcis
,, Camphoræ
Unguentum Cantharidis
,, Hydrargyri Compositum
,, Hydrargyri Nitratis
Unguentum Veratrinæ

OLEUM PHOSPHORATUM.

Phosphorated Oil.

Take of

Phosphorus Oil of Almonds	of each . . . a sufficiency

Heat the oil in a porcelain dish to about 300° F. (149° C.), and keep it at this temperature for about fifteen minutes, then let it cool, and filter it through paper. Put 4 fluid ounces of this oil into a stoppered bottle, capable of holding 4½ fluid ounces, and add to it 16 grains of pure dry phosphorus. Immerse the bottle in hot water until the oil has acquired the temperature of 180° F. (82°·2 C.), removing the stopper two or three times to allow the escape of expanded air, then shake the oil and phosphorus together until the latter is entirely dissolved.

Characters.—A clear straw-coloured oil; phosphorescent in the dark. It contains about one per cent. of phosphorus.[1]

Dose.—5 to 10 minims.

OLEUM PIMENTÆ.

Oil of Pimento.

The oil distilled in Britain from pimento.

Characters.—Colourless or slightly yellowish-red when recent, but becoming brown by age, having the odour and taste of pimento. Sinks in water.

Dose.—1 to 4 minims.

OLEUM PINI SYLVESTRIS.

Fir-wool Oil.

The oil distilled from the fresh leaves of Pinus sylvestris, *Linn.*; *Lamb. Gen. Pin.* plate 1.

Characters and Tests.—Colourless or nearly so, with an aromatic lavender-like odour and a pungent but not unpleasant flavour. Specific gravity not below 0·870. Soluble in about seven times its volume of rectified spirit.

Preparation.—Vapor Olei Pini Sylvestris.

OLEUM RICINI.

Castor Oil.

The oil expressed from the seeds of Ricinus communis, *Linn.*; *Bot. Mag.* plate 2209.

Characters.—Viscid, colourless or pale straw-yellow, having scarcely any odour, and a mild taste at first but subsequently acrid and unpleasant. Entirely soluble in one volume of absolute alcohol, and in two volumes of rectified spirit.

Dose.—1 to 8 fluid drachms.

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[1] *Oleum Phosphoratum*, B. P. Additions, 1874, contained about 0·75 per cent.

Preparations.

Collodium Flexile	1 in 50, about
Linimentum Sinapis Compositum	1 fluid drachm to 1 fluid ounce
Pilula Hydrargyri Subchloridi Composita	

OLEUM ROSMARINI.

Oil of Rosemary.

The oil distilled from the flowering tops of Rosmarinus officinalis, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iii. plate 207.

Characters.—Colourless or pale yellow, with the odour of rosemary, and a warm aromatic taste.

Dose.—1 to 4 minims.

Preparations.

Linimentum Saponis	1 fluid drachm in 7 fluid ounces, nearly
Spiritus Rosmarini	1 volume in 50
Tinctura Lavandulæ Composita	5 minims in 1 pint

OLEUM RUTÆ.

Oil of Rue.

The oil distilled from the fresh herb of Ruta graveolens, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. i. plate 44.

Characters.—Pale yellow when recent, with a strong disagreeable odour and a bitter acrid taste.

Dose.—1 to 4 minims.

OLEUM SABINÆ.

Oil of Savin.

The oil distilled in Britain from the fresh tops of Juniperus Sabina, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iv. plate 254.

Characters.—Colourless or pale yellow, with the odour of the plant and a bitterish acrid taste.

Dose.—1 to 4 minims.

OLEUM SANTALI.

Oil of Sandal Wood.

Synonym.—Oleum Santali Flavi.

The oil distilled from the wood of Santalum album, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iv. plate 252.

Characters and Tests.—Thick in consistence, pale yellow in colour, a strongly aromatic odour, a pungent and spicy flavour, and neutral or slightly acid in reaction. Its specific gravity is usually about 0·96. It is readily soluble in alcohol.

Dose.—10 to 30 minims.

OLEUM SINAPIS.

Oil of Mustard.

The oil distilled with water from black mustard seeds after the expression of the fixed oil.

Characters.—Colourless or pale yellow. Specific gravity 1·015 to 1·020. Boiling point about 298° F. (147°·8 C.) Dissolves readily in alcohol and ether, and to a slight extent in water. Has an intensely penetrating odour and a very acrid burning taste. Applied to the skin it produces almost instant vesication.

Preparation.—Linimentum Sinapis Compositum.

OLEUM TEREBINTHINÆ.

Oil of Turpentine.

The oil distilled, usually by aid of steam, fro the oleo-resin (turpentine) obtained from Pinus australis, *Mich.* (Pinus palustris, *Mill.*), Pinus Tæda, *Linn.*, and sometimes from Pinus Pinaster, *Solander*, and Pinus sylvestris, *Linn.*; *Lamb. Ill. Gen. Pin.* 2nd edit., plates 20, 17 and 18, 9 and 10, and 1; rectified if necessary.

Characters and Tests.—Limpid, colourless, with a strong peculiar odour, which varies in the different kinds, and a pungent and bitterish taste. It commences to boil at about 320° F. (160° C.), and almost entirely distils below 356° F. (180° C.), little or no residue remaining.

Dose.—10 minims to 4 fluid drachms.

Preparations.

Confectio Terebinthinæ
Enema Terebinthinæ
Linimentum Terebinthinæ
Linimentum Terebinthinæ Aceticum
Unguentum Terebinthinæ

OLEUM THEOBROMATIS.

Oil of Theobroma.

Synonym.—Cacao Butter.

A concrete oil obtained by expression and heat from the ground seeds of Theobroma Cacao, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. i. plate 38.

Characters.—Of the consistency of tallow; colour yellowish; odour resembling that of chocolate; taste bland and agreeable; fracture clean, presenting no appearance of foreign matter. Does not become rancid from exposure to the air. It usually melts at temperatures between 86° and 95° F. (30° and 35° C.)

Preparations.

Suppositoria Acidi Tannici
,, Hydrargyri
,, Iodoformi
,, Morphinæ
,, Plumbi Composita

OPIUM.

Opium.

The juice obtained in Asia Minor by incision from the unripe capsules of Papaver somniferum, *Linn.*, inspissated by spontaneous evaporation.

Any ordinary variety of opium may be employed as a source of alkaloids; but, otherwise used for officially recognised purposes, opium must be that obtained in Asia Minor, and must be of such a strength that, when dried and powdered and the powder heated to 212° F. (100° C.) until it ceases to lose moisture, and the product tested by the appended method, or any trustworthy method, it shall yield, as nearly as practicable, 10 per cent. of morphine; that is, 100 parts of such dry powdered opium shall yield not less than 9·5 parts, and not more than 10·5 parts, of morphine.

Characters.—In rounded, irregularly-formed, or flattened masses, varying in weight, but commonly from about eight ounces to two pounds, usually covered with portions of poppy leaves, and scattered over with the reddish-brown chaffy fruits of a species of Rumex. When fresh, plastic, and internally somewhat moist, coarsely granular, and reddish- or chestnut-brown; but becoming harder by keeping, and darkening to blackish-brown. Odour strong, peculiar, narcotic; taste nauseously bitter.

Test.—Take of

Powdered Opium, dried at 212° F. (100° C.)	140 grains
Lime, freshly slaked	60 grains
Chloride of Ammonium	40 grains
Rectified Spirit Ether Distilled Water of each	a sufficiency

Triturate together the opium, lime, and 400 grain-measures of distilled water in a mortar until a uniform mixture results; then add 1000 grain-measures of distilled water and stir occasionally during half an hour. Filter the mixture through a plaited filter about three inches in diameter into a wide-mouthed bottle or stoppered flask (having the capacity of about six fluid ounces and marked at exactly 1040 grain-measures) until the filtrate reaches this mark. To the filtered liquid (representing 100 grains of opium) add 110 grain-measures of rectified spirit and 500 grain-measures of ether, and shake the mixture; then add the chloride of ammonium, shake well and frequently during half an hour, and set it aside for twelve hours. Counterbalance two small filters; place one within the other in a small funnel, and decant the ethereal layer as completely as practicable upon the inner filter. Add 200 grain-measures of ether to the contents of the bottle and rotate it; again decant the ethereal layer upon the filter, and afterwards wash the latter with 100 grain-measures of ether added slowly and in portions. Now let the filter dry in the air, and pour upon it the liquid in the bottle in portions, in such a way as to transfer the greater portion of the crystals to the filter. When the fluid has passed through the filter, wash the bottle and transfer the remaining crystals to the filter, with several small portions of distilled water, using not much more than 200 grain-measures in all, and distributing the portions evenly upon the filter. Allow the filter to drain, and dry it, first by pressing between sheets of bibulous paper, and afterwards at a temperature between 181° and 140° F. (55° and 60° C.), and, finally, at 194° to 212° F. (96° to 100° C.) Weigh the crystals in the inner filter, counterbalan cing by the outer filter. The crystals should weigh ten grains, or not less than nine and a half and not more than ten and a half grains, corresponding to about ten per cent. of morphine in the dry powdered opium.

Dose.—½ grain to 3 grains.

Preparations.

Codeina	
Confectio Opii . . .	1 part in 40, nearly
Emplastrum Opii . .	1 part in 10
Enema Opii . . .	½ fl. drm. Tincture to 2 fl. oz.
Extractum Opii . . .	about 1 part from 2
,, ,, Liquidum .	22 grs. Extract in 1 fl. oz. nearly
Linimentum Opii . .	1 volume Tincture in 2 volumes
Morphinæ Acetas . .	about 1 part from 8 or 10
,, Acetatis Liquor .	4½ grs. Acetate in 1 fl. oz.
,, Bimeconatis Liquor	5½ grs. Bimeconate in 1 fl. oz.
,, Hydrochloras .	about 1 part from 8 or 10
,, Hydrochloratis Liquor . .	4½ grs. Hydrochlorate in 1 fl. oz.
,, Sulphas . .	about 1 part from 7½
Pilula Ipecacuanhæ cum Scilla . .	1 part in 23, nearly
,, Plumbi cum Opio .	1 part in 8
,, Saponis Composita	1 part in 6, nearly
Pulvis Cretæ Aromaticus cum Opio . .	1 part in 40
,, Ipecacuanhæ Compositus . .	1 part in 10
,, Kino Compositus .	1 part in 20
,, Opii Compositus .	1 part in 10
Suppositoria Plumbi Composita	1 grain in each suppository
Tinctura Camphoræ Composita	2 grains to 1 fluid ounce
,, Opii	33 grains to 1 fluid ounce, nearly
,, ,, Ammoniata .	5 grains to 1 fluid ounce
Trochisci Opii	⅒ grain of Extract in each
Unguentum Gallæ cum Opio .	32 grains to 1 ounce
Vinum Opii	22 grs. Extract in 1 fl. oz. nearly

OS USTUM.

Bone Ash.

The residue of bones which have been burned to a white ash in contact with air. Consists principally of phosphate of calcium mixed with about 10 per cent. of carbonate of calcium, and a little fluoride of calcium, silica, and phosphate of magnesium.

Preparations for which Bone Ash is used.

Calcii Phosphas | Sodii Phosphas

OVI ALBUMEN.

Egg Albumen.

The liquid white of the egg of Gallus Bankiva *var.* domesticus, *Temminck.*

OVI VITELLUS.

Yolk of Egg.

The yolk of the egg of Gallus Bankiva *var.* domesticus, *Temminck.*

Preparation.—Mistura Spiritus Vini Gallici.

OXYMEL.

Oxymel.

Take of

Clarified Honey .	40 ounces	or . .	8 parts
Acetic Acid .	5 fluid ounces . .	,, . .	1 fluid part
Distilled Water .	5 fluid ounces . .	,, . .	1 fluid part

Liquefy the honey by heat, and mix with it the acetic acid and water.

Dose.—1 to 2 fluid drachms.

OXYMEL SCILLÆ.

Oxymel of Squill.

Take of

Vinegar of Squill	1 pint . . .	or . .	5 fluid parts
Clarified Honey	2 pounds . .	,, . .	8 parts

Mix and evaporate by a water-bath until the product when cold shall have a specific gravity of 1·32.

Dose.—½ to 1 fluid drachm.

PAPAVERIS CAPSULÆ.

Poppy Capsules.

The nearly ripe dried capsules of Papaver somniferum, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. i. plate 18. From plants cultivated in Britain.

Characters.—Rounded, ovoid-rounded, or somewhat oblong, from two to three inches in diameter, suddenly contracted below into a neck, and crowned above by the stellately-arranged stigmas; yellowish or yellowish-brown externally, and frequently dotted with blackish spots. Presenting internally a variable number of thin brittle parietal placentas directed towards the centre of the cavity, and a very large number of loose, small, reniform, whitish, slate-coloured, or nearly black seeds. Inodorous; taste slightly bitter.

Preparations.

Decoctum Papaveris	2 ounces to 1 pint
Extractum Papaveris	1 part from 3, nearly
Syrupus Papaveris	1 part to 3, nearly

PARAFFINUM DURUM.

Hard Paraffin.

Synonyms.—**Paraffin; Paraffin Wax; Solid Paraffin.**

A mixture of several of the harder members of the paraffin series of hydrocarbons; usually obtained by distillation from shale, separation of the liquid oils by refrigeration, and purification of the solid product.

Characters and Tests.—Colourless, semi-transparent, crystalline, inodorous and tasteless, slightly greasy to the touch. Specific gravity 0·82 to 0·94. Insoluble in water, slightly soluble in absolute alcohol, freely soluble in ether. It melts at 110° to 145° F. (43°·3 to 62°·8 C.), and burns with a bright flame, leaving no residue.

Preparations.

Unguentum Acidi Borici
,, ,, Carbolici
,, ,, Salicylici
,, Eucalypti
,, Glycerini Plumbi Subacetatis
Unguentum Hydrargyri Oxidi Rubri
,, Potassæ Sulphuratæ
,, Sulphuris Iodidi
,, Veratrinæ

PARAFFINUM MOLLE.

Soft Paraffin.

Synonyms.—Petrolatum; Pétroléine; Unguentum Paraffinum.

A semi-solid mixture containing some of the softer or more fluid members of the paraffin series of hydrocarbons; usually obtained by purifying the less volatile portions of petroleum. It is known in commerce by various fanciful names.

Characters.—White or yellowish, translucent, soft, greasy; free from acidity, alkalinity, or any unpleasant odour or flavour, even when warmed to 120° F. (48°·9 C.) Specific gravity, at the melting point, from about 0·840 to 0·870. Melts at 95° to 105° F. (35° to 40°·5 C.), or even somewhat higher, volatilises without giving acrid vapours, and burns with a bright flame, leaving no residue. Insoluble in water, slightly soluble in absolute alcohol, freely soluble in ether, chloroform, benzol, &c. It is not saponified by solutions of alkalies.

Preparations.

Unguentum Acidi Borici
,, ,, Carbolici
,, ,, Salicylici
,, Eucalypti
,, Glycerini Plumbi Subacetatis
,, Hydrargyri Oxidi Rubri
,, ,, Nitratis Dilutum
,, Potassæ Sulphuratæ
,, Sulphuris Iodidi
,, Veratrinæ
,, Zinci Oleati

PAREIRÆ RADIX.

Pareira Root.

The dried root of Chondrodendron tomentosum, *Ruiz and Pavon*; *Bentl. and Trim. Med. Pl.* vol. i. plate 11.

Characters and Test.—In long nearly cylindrical more or less twisted pieces, from about three-quarters of an inch to two or more inches thick; covered with a thin blackish-brown bark, and marked externally with longitudinal furrows and transverse ridges and fissures. Internally yellowish- or brownish-grey, with well-marked concentric or more or less eccentric circles of porous wood, separated into wedge-shaped portions by large medullary rays, and when cut presenting a waxy appearance. No odour, taste bitter. Its decoction, when cold, is turned inky bluish-black by solution of iodine.

Preparations.

Decoctum Pareiræ . . .	1¼ ounce to 1 pint
Extractum Pareiræ	
,, ,, Liquidum	

PEPSIN.

Pepsin.

A preparation of the mucous lining of the fresh and healthy stomach of the pig, sheep, or calf. It may be prepared as follows:—

The stomach of one of these animals recently killed having been cut open and laid on a board with the inner surface upwards, any adhering portions of food, dirt, or other impurity, are to be removed and the exposed surface slightly and rapidly washed with a little cold water; the cleansed mucous membrane is then to be scraped with a blunt knife or other suitable instrument, with some pressure, and the viscid pulp thus obtained is to be immediately spread over the surface of glass or glazed earthenware and quickly dried at a temperature not exceeding 100° F. (37°·8 C.). The dried residue is to be reduced to powder and preserved in a stoppered bottle.

Characters and Tests.—A light yellowish-brown powder, having a faint, but not disagreeable odour, and a slightly saline taste, without any indication of putrescence. Very little soluble in water or spirit. Two grains of it with an ounce of distilled water, to which five minims of hydrochloric acid have been added, form a mixture in which at least 100 grains of hard-boiled white of egg, passed through wire gauze of 36 meshes per linear inch and made of No. 32 brass or copper wire, will dissolve on their being well mixed, digested, and well stirred together for thirty minutes at a temperature of 130° F. (54°·4 C.)

Dose.—2 to 5 grains.

PHOSPHORUS.
Phosphorus.

A non-metallic element obtained from bones.

Characters and Tests.—A semi-transparent, colourless, wax-like solid, which emits white vapours when exposed to the air. Specific gravity 1·77. It is soft and flexible at common temperatures, melts at 110° F. (43·3° C.), ignites in the air at a temperature a little above its melting point, burning with a luminous flame and producing dense white fumes. Insoluble in water, but soluble in ether and in boiling oil of turpentine.

Preparations.

Acidum Phosphoricum Concentratum	Oleum Phosphoratum
Acidum Phosphoricum Dilutum	Pilula Phosphori

PHYSOSTIGMATIS SEMEN.

Calabar Bean.

Synonym.—Physostigmatis Faba.

The dried seed of Physostigma venenosum, *Balfour, Trans. Royal Soc. Edinb.* vol. xxii. page 305.

Characters and Test.—From about one inch to one inch and a quarter long, three-quarters of an inch broad, and half an inch or somewhat more in thickness; oblong and more or less reniform, and with a long broad blackish furrow running entirely along its convex side. Testa hard, brittle, roughish, deep chocolate-brown or brownish-red, and enclosing a closely-adhering nucleus which principally consists of two hard white brittle cotyledons separated from each other by a somewhat large cavity. Inodorous, and no marked taste beyond that of an ordinary bean. It yields its virtues to alcohol, and imperfectly to water. The cotyledons when moistened with solution of potash acquire a permanent pale yellow colour.

Dose, in powder.—1 to 4 grains.

Preparation.—Extractum Physostigmatis.

PHYSOSTIGMINA.

Physostigmine.

Synonym.—Eserine.

$C_{15}H_{21}N_3O_2$.

An alkaloid obtained from the alcoholic extract of Calabar bean, by dissolving the extract in water, adding bicarbonate of sodium, shaking the mixture with ether, and evaporating the ethereal liquid.

Characters and Tests.—In colourless or pinkish crystals.

slightly soluble in water, but readily soluble in alcohol and in diluted acids. The aqueous solution has an alkaline reaction, when warmed with or when shaken with dilute solution of potash becomes red, and when evaporated to dryness over a water-bath leaves a bluish residue, the acidified solution of which is beautifully dichroic, being blue and red. Physostigmine causes contraction of the pupil of the eye.

Preparation.—Lamellæ Physostigminæ.

PILOCARPINÆ NITRAS.

Nitrate of Pilocarpine.

$C_{11}H_{16}N_2O_2,HNO_3$.

The nitrate of an alkaloid obtained from extract of jaborandi by shaking it with chloroform and alkali, evaporating the chloroformic solution, neutralising the product with nitric acid and purifying by recrystallisation.

Characters and Tests.—In a white crystalline powder or in acicular crystals; soluble in eight or nine parts of water at common temperatures; slightly soluble in cold, freely soluble in hot rectified spirit. Strong sulphuric acid forms with it a yellowish solution which, on the addition of bichromate of potassium, gradually acquires an emerald-green colour. It leaves no ash when burned with free access of air. It causes contraction of the pupil of the eye.

Dose.—$\frac{1}{20}$ to $\frac{1}{2}$ grain.

PILULA ALOES BARBADENSIS.

Pill of Barbadoes Aloes.

Take of

Barbadoes Aloes, in powder	2 ounces	or	16 parts
Hard Soap, in powder	1 ounce	,,	8 parts
Oil of Caraway	1 fl. drachm	,,	1 fl. part
Confection of Roses	1 ounce	,,	8 parts

Beat all together until thoroughly mixed.

Dose.—5 to 10 grains.

PILULA ALOES ET ASAFŒTIDÆ.

Pill of Aloes and Asafœtida.

Take of

Socotrine Aloes, in powder	1 ounce	or	1 part
Asafœtida	1 ounce	,,	1 part
Hard Soap, in powder	1 ounce	,,	1 part
Confection of Roses	abt. 1 oz. or a sufficiency	,,	1 part or a sufficiency

Beat all together, until thoroughly mixed.

Dose.—5 to 10 grains.

PILULA ALOES ET FERRI.

Pill of Aloes and Iron.

Take of

Sulphate of Iron	1½ ounce	or	1½ part
Barbadoes Aloes, in powder	2 ounces	,,	2 parts
Compound Powder of Cinnamon	3 ounces	,,	3 parts
Confection of Roses	4 ounces	,,	4 parts

Reduce the sulphate of iron to powder, rub it with the aloes and compound powder of cinnamon, and adding the confection, make the whole into a uniform mass.

Dose.—5 to 10 grains.

PILULA ALOES ET MYRRHÆ.

Pill of Aloes and Myrrh.

Take of

Socotrine Aloes	2 ounces	or	2 parts
Myrrh	1 ounce	,,	1 part
Saffron, dried	½ ounce	,,	½ part
Treacle	1 ounce	,,	1 part
Glycerine	a sufficiency		

Triturate the aloes, myrrh, and saffron together; then add the treacle and sufficient glycerine, and beat them together into a uniform mass.

Dose.—5 to 10 grains.

PILULA ALOES SOCOTRINÆ.

Pill of Socotrine Aloes.

Take of

Socotrine Aloes, in powder	2 ounces	or	16 parts
Hard Soap, in powder	1 ounce	,,	8 parts
Volatile Oil of Nutmeg	1 fluid drachm	,,	1 fl. part
Confection of Roses	1 ounce	,,	8 parts

Beat all together, until thoroughly mixed.

Dose.—5 to 10 grains.

PILULA ASAFŒTIDÆ COMPOSITA.

Compound Pill of Asafœtida.

Synonym.—Pilula Galbani Composita.

Take of

Asafœtida Galbanum Myrrh	of each	2 ounces	or	2 parts
Treacle, by weight		1 ounce	,,	1 part

Heat all together by means of a water-bath, and stir the mass until it assumes a uniform consistence.

Dose.—5 to 10 grains.

PILULA CAMBOGIÆ COMPOSITA.

Compound Pill of Gamboge.

Take of

Gamboge, in powder	1 ounce	or	1 part
Barbadoes Aloes, in powder	1 ounce	,,	1 part
Compound Powder of Cinnamon	1 ounce	,,	1 part
Hard Soap, in powder	2 ounces	,,	2 parts
Syrup	a sufficiency		

Mix the powders together, add the syrup, and beat the whole into a uniform mass.

Dose.—5 to 10 grains.

PILULA COLOCYNTHIDIS COMPOSITA.

Compound Pill of Colocynth.

Take of

Colocynth Pulp, in powder	1 ounce	or	4 parts
Barbadoes Aloes, in powder	2 ounces	,,	8 parts
Resin of Scammony, in powder	2 ounces	,,	8 parts
Sulphate of Potassium, in powder	¼ ounce	,,	1 part
Oil of Cloves	2 fl. drachms	,,	1 fl. part
Distilled Water	a sufficiency		

Mix the powders, add the oil of cloves, and beat into a mass with the aid of the water.

Dose.—5 to 10 grains.

PILULA COLOCYNTHIDIS ET HYOSCYAMI.

Pill of Colocynth and Henbane.

Take of

Compound Pill of Colocynth	2 ounces	or	2 parts
Extract of Henbane	1 ounce	,,	1 part

Beat them into a uniform mass.

Dose.—5 to 10 grains.

PILULA CONII COMPOSITA.

Compound Pill of Hemlock.

Take of

Extract of Hemlock	2½ ounces	or	5 parts
Ipecacuanha, in powder	½ ounce	,,	1 part
Treacle	a sufficiency		

Mix the extract of hemlock and ipecacuanha, and add sufficient treacle to form a pill-mass.

Dose.—5 to 10 grains.

PILULA FERRI CARBONATIS.

Pill of Carbonate of Iron.

Take of

Saccharated Carbonate of Iron	1 ounce	or	4 parts
Confection of Roses	¼ ounce	,,	1 part

Beat them into a uniform mass.

Dose.—5 to 20 grains.

PILULA FERRI IODIDI.

Pill of Iodide of Iron.

Take of

Fine Iron Wire	40 grains	or	40 parts
Iodine	80 grains	,,	80 parts
Refined Sugar, in powder	70 grains	,,	70 parts
Liquorice Root, in powder	140 grains	,,	140 parts
Distilled Water	50 minims	,,	46 fluid parts

Agitate the iron with the iodine and the water in a strong stoppered ounce phial, until the froth becomes white. Pour the fluid upon the sugar in a mortar, triturate briskly, and gradually add the liquorice.

Dose.—3 to 8 grains.

PILULA HYDRARGYRI.

Mercurial Pill.

Synonym.—Blue Pill.

Take of

Mercury, by weight	2 ounces	or	2 parts
Confection of Roses	3 ounces	,,	3 parts
Liquorice Root, in fine powder	1 ounce	,,	1 part

Rub the mercury with the confection of roses until metallic globules are no longer visible, then add the liquorice, and mix the whole well together.

Dose.—3 to 8 grains.

PILULA HYDRARGYRI SUBCHLORIDI COMPOSITA.

Compound Pill of Subchloride of Mercury.

Synonym.—Pilula Calomelanos Composita.

Take of

Subchloride of Mercury	1 ounce	or	1 part
Sulphurated Antimony	1 ounce	,,	1 part
Guaiacum Resin, in powder	2 ounces	,,	2 parts
Castor Oil	1 fl. oz. or a sufficiency	,,	1 fl. part or a sufficiency

Triturate the subchloride of mercury with the antimony, then add the guaiacum resin and castor oil, and beat the whole into a uniform mass.

Dose.—5 to 10 grains.

PILULA IPECACUANHÆ CUM SCILLA.

Pill of Ipecacuanha with Squill.

Take of

Compound Powder of Ipecacuanha	3 ounces	or	3 parts
Squill, in powder	1 ounce	,,	1 part
Ammoniacum, in powder	1 ounce	,,	1 part
Treacle			a sufficiency

Mix the powders, and beat into a mass with the treacle.

Dose.—5 to 10 grains.

PILULA PHOSPHORI.

Phosphorus Pill.

Take of

Phosphorus	3 grains
Balsam of Tolu	120 grains
Yellow Wax	57 grains
Curd Soap	90 grains

Put the phosphorus and balsam of tolu into a mortar about half full of hot water, and when the phosphorus has melted and the balsam has become sufficiently soft, rub them together beneath the surface of the water until no particles of phosphorus are visible, the temperature of the water being maintained at or near to 140° F. (60° C.) Add now the wax, and as it softens mix it thoroughly with the other ingredients. Allow the mass to cool without being exposed to the air, and keep it immersed in cold water in a bottle.

When dispensed, every two grains of the product is to be incorporated with one grain of the soap; a few drops of rectified spirit being used, if necessary, to soften the whole.

Three grains of the mass so produced, including the soap, will contain $\frac{1}{30}$th of a grain of phosphorus.

Dose.—2 to 4 grains.

PILULA PLUMBI CUM OPIO.

Pill of Lead and Opium.

Take of

Acetate of Lead, in fine powder	36 grains	or	6 parts
Opium, in powder	6 grains	,,	1 part
Confection of Roses	6 grains	,,	1 part

Beat them into a uniform mass.

Dose.—3 to 5 grains.

PILULA RHEI COMPOSITA.

Compound Rhubarb Pill.

Take of

Rhubarb Root, in powder	3 ounces	or	6 parts
Socotrine Aloes, in powder	2¼ ounces	,,	4½ parts
Myrrh, in powder	1½ ounce	,,	3 parts
Hard Soap, in powder	1½ ounce	,,	3 parts
Oil of Peppermint	1½ fl. drachm	,,	⅓ part
Glycerine	1 ounce	,,	2 parts
Treacle, by weight	about 3 ozs.	,,	6 parts

Mix the powders with the oil, then add the glycerine and sufficient treacle, and beat the whole into a uniform mass.

Dose.—5 to 10 grains.

PILULA SAPONIS COMPOSITA.

Compound Pill of Soap.

Synonym.—Pilula Opii.

Take of

Opium, in powder	½ ounce	or	1 part
Hard Soap, in powder	2 ounces	,,	4 parts
Glycerine			a sufficiency

Mix the opium and soap, and beat into a uniform mass with the glycerine.

Dose.—3 to 5 grains.

PILULA SCAMMONII COMPOSITA.

Compound Scammony Pill.

Take of

Resin of Scammony	1 ounce	or	1 part
Resin of Jalap	1 ounce	,,	1 part
Curd Soap, in powder	1 ounce	,,	1 part
Strong Tincture of Ginger	1 fl. ounce	,,	1 fl. part
Rectified Spirit	2 fl. ounces	,,	2 fl. parts

Add the spirit and tincture to the soap and resins, and dissolve with the aid of a little heat; then evaporate the spirit by the heat of a water-bath until the mass has acquired a suitable consistence for forming pills.

Dose.—5 to 15 grains.

PILULA SCILLÆ COMPOSITA.

Compound Squill Pill.

Take of

Squill, in powder	1¼ ounce	or	1¼ part
Ginger, in powder	1 ounce	,,	1 part
Ammoniacum, in powder	1 ounce	,,	1 part
Hard Soap, in powder	1 ounce	,,	1 part
Treacle, by weight	2 ozs., or a sufficiency	,,	2 parts, or a sufficiency

Mix the powders, add the treacle, and beat into a uniform mass.

Dose.—5 to 10 grains.

PIMENTA.

Pimento.

The dried unripe full-grown fruit of Pimenta officinalis, *Lindl.* (Eugenia Pimenta, *DC.*); *Bentl. and Trim. Med. Pl.* vol. ii. plate 111.

Characters.—Dry, light, roundish, one-fifth of an inch or more in diameter, and crowned with the remains of the calyx in the form commonly of a raised scar-like ring; pericarp roughish from the presence of oil-glands, brittle, dark-brown, two-celled, each cell containing a brownish-black somewhat compressed reniform seed. Odour and taste warm, aromatic, and peculiar, but resembling cloves.

Preparations.

Aqua Pimentæ . . .	14 ounces to 1 gallon
Oleum Pimentæ	

PIPER NIGRUM.

Black Pepper.

The dried unripe fruit of Piper nigrum, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iv. plate 245.

Characters.—Roundish, usually about one-fifth of an inch in diameter; pericarp thin, blackish-brown, wrinkled, and containing a hard smooth roundish seed of a yellowish-brown or grey colour. Odour aromatic; taste pungent and bitterish.

Preparations.

Confectio Opii	1 part in 31
,, Piperis	1 part in 10
Pulvis Opii Compositus . . .	1 part in 7½

PIX BURGUNDICA.

Burgundy Pitch.

The resinous exudation obtained from the stem of Pinus Picea, *Du Roi* (Pinus Abies, *Linn.*; Abies excelsa, *DC.*); *Lamb. Ill. Gen. Pinus*, 2nd ed. plate 27; melted and strained.

Characters and Test.—Hard and brittle, yet gradually taking the form of the vessel in which it is kept; somewhat opaque, dull reddish-brown or yellowish-brown, fracture clear and conchoidal. Odour agreeable and aromatic, especially when heated; taste sweet, aromatic, without bitterness. Readily soluble in glacial acetic acid.

Preparations.

Emplastrum Ferri . . .	2 parts in 11
,, Picis . . .	1 part in 2, nearly

PIX LIQUIDA.

Tar.

A bituminous liquid, obtained from the wood of Pinus sylvestris, *Linn.*, and other species of Pinus, by destructive distillation.

Characters.—A dark-brown or blackish semi-liquid substance, of a well-known peculiar aromatic odour. Water agitated with it acquires a pale-brown colour, sharp empyreumatic taste, and acid reaction.

Preparation.—Unguentum Picis Liquidæ.

PLUMBI ACETAS.

Acetate of Lead.

$Pb(C_2H_3O_2)_2,3H_2O$.

It may be obtained by the following process:—

Take of

Oxide of Lead, in fine powder	24 ounces
Acetic Acid	2 pints, or a sufficiency
Distilled Water . . .	1 pint

Mix the acetic acid and the water, add the oxide of lead, and dissolve with the aid of a little heat. Filter, evaporate till a pellicle forms, and set aside to crystallise, first adding a little acetic acid should the fluid not have a distinctly acid reaction. Drain and dry the crystals on filtering paper, without heat.

Characters and Tests.—In white crystalline masses, slightly efflorescent, having an acetous odour, and a sweet astringent taste. Its solution in water slightly reddens litmus, gives a yellow precipitate with iodide of potassium, and is precipitated white by sulphuric acid, acetic acid being set free. Its solution in distilled water is clear, or has only a slight milkiness, which disappears on the addition of acetic acid. Thirty-eight grains dissolved in water requires for complete precipitation 200 grain-measures of the volumetric solution of oxalic acid.

Dose.—1 to 4 grains.

Preparations in which Acetate of Lead is used.

Glycerinum Plumbi Subacetatis	
Liquor Plumbi Subacetatis . . .	5 ounces to 1 pint
Pilula Plumbi cum Opio . . .	3 parts in 4
Suppositoria Plumbi Composita . .	3 grains in each, or 1 part in 5
Unguentum Glycerini Plumbi Acetatis .	1 part in 38

PLUMBI CARBONAS.

Carbonate of Lead.

Characters and Tests.—A soft heavy white powder, blackened by sulphuretted hydrogen, insoluble in water, soluble with effervescence in diluted acetic acid without leaving any residue, and forming a solution which is precipitated white by sulphuric acid, and yellow by iodide of potassium. The acetic solution when treated with excess of sulphuretted hydrogen, boiled and filtered, gives no precipitate with oxalate of ammonium.

Preparation.

Unguentum Plumbi Carbonatis . .	1 part in 8

PLUMBI IODIDUM.

Iodide of Lead.

PbI_2.

Take of

Nitrate of Lead Iodide of Potassium	of each . .	4 ounces
Distilled Water		a sufficiency

Dissolve the nitrate of lead, by the aid of heat, in a pint and a half, and the iodide of potassium in half a pint of the water, and mix the solutions. Collect the precipitate on a filter, wash it with distilled water, and dry it in a warm place.

Preparations.

Emplastrum Plumbi Iodidi . . .	1 part in 9
Unguentum Plumbi Iodidi . . .	1 part in 8

PLUMBI NITRAS.

Nitrate of Lead.

$Pb(NO_3)_2$.

Characters and Tests.—In colourless octahedral crystals which are nearly opaque, permanent in the air, of a sweetish astringent taste, soluble in water and in alcohol. The aqueous solution is precipitated black by sulphuretted hydrogen, white by diluted sulphuric acid, and yellow by iodide of potassium. Added to sulphate of indigo it discharges the colour.

Preparation for which Nitrate of Lead is used.

Plumbi Iodidum

PLUMBI OXIDUM.

Oxide of Lead.

Synonym.—Litharge.

PbO.

Characters and Tests.—In heavy scales of a pale brick-red colour, completely soluble without effervescence in diluted nitric and acetic acids, and each solution, when neutral, giving a copious yellow precipitate with iodide of potassium. Its solution in diluted nitric acid, when supersaturated with ammonia and then cleared by filtration, does not exhibit a blue colour.

Preparations for which Oxide of Lead is used.

Emplastrum Plumbi
,, Saponis Fuscum
Liquor Plumbi Subacetatis
Plumbi Acetas

Preparations containing Lead.

Emplastrum Belladonnæ
,, Calefaciens
,, Saponis Fuscum
,, Ferri
,, Galbani
,, Hydrargyri
,, Opii
,, Plumbi
,, Resinæ
,, Saponis
Liquor Plumbi Subacetatis
,, ,, ,, Dilutus
Pilula Plumbi cum Opio
Plumbi Acetas
,, Carbonas
,, Iodidum
,, Nitras
Suppositoria Plumbi Composita
Unguentum Glycerini Plumbi Subacetatis
,, Plumbi Acetatis
,, ,, Carbonatis
,, ,, Iodidi

PODOPHYLLI RHIZOMA.

Podophyllum Rhizome.

Synonym.—Podophylli Radix.

The dried rhizome and rootlets of Podophyllum peltatum, *Linn.*; *Bot. Mag.* plate 1819.

Characters.—In pieces of variable length, and from about one-fifth to one-third of an inch thick; flattened-cylindrical, presenting at varying intervals large irregular tuberosities, which are marked above by a depressed circular scar, and giving off below a variable number of very brittle brownish rootlets or, if these are broken off, presenting a corresponding number of whitish scars; dark reddish-brown or reddish-yellow; smooth or somewhat wrinkled; breaking with a short fracture, internally whitish and mealy. Odour faintly narcotic; taste bitterish, acrid, and nauseous.

Preparation.—Podophylli Resina.

PODOPHYLLI RESINA.

Resin of Podophyllum.

Take of

Podophyllum Rhizome, in No. 40 powder	1 pound
Rectified Spirit	3 pints, or a sufficiency
Distilled Water	a sufficiency

Exhaust the podophyllum with the spirit by percolation; place the tincture in a still, and draw off the greater part of the spirit. Slowly pour the liquor which remains after the distillation of the tincture into three times its volume of the water, constantly stirring. Allow the mixture to stand for twenty-four hours to deposit the resin. Wash the resin on a filter with distilled water, and dry it in a stove.

Characters.—An amorphous powder, varying in colour from pale yellow to deep orange-brown; soluble in rectified spirit and in ammonia; precipitated from the former solution by water, from the latter by acids. Partly soluble in pure ether.

Dose.—¼ to 1 grain.

Preparation.

Tinctura Podophylli . .	1 grain in 1 fluid drachm

POTASSA CAUSTICA.

Caustic Potash.

Synonyms.—Potassæ Hydras; Potassa; Hydrate of Potash.

Hydrate of potassium, KHO, containing some impurities.

Take of

Solution of Potash	2 pints

Boil down the solution of potash rapidly in a clean silver vessel, until there remains a clear fluid of oily consistence, a drop of which when removed on a warm glass rod solidifies on cooling. Pour this into proper moulds, and when it has solidified, and while it is still warm, put it into stoppered bottles.

Characters and Tests.—In hard white pencils or cakes, very deliquescent, powerfully alkaline and corrosive. A watery solution acidulated by nitric acid gives a yellow precipitate with perchloride of platinum, and only scanty white precipitates with nitrate of silver and chloride of barium. Fifty-six grains dissolved in water leaves only a trace of sediment, and requires for neutralisation at least 900 grain-measures of the volumetric solution of oxalic acid.

Preparation containing Caustic Potash.

Liquor Potassæ . .	27 grains in 1 fluid ounce

Preparation for which Caustic Potash is used.

Potassii Permanganas

Preparations containing Potassium and its Compounds.

Antimonium Tartaratum
Argenti et Potassii Nitras
Confectio Sulphuris
Decoctum Aloes Compositum
Enema Aloes
Ferrum Tartaratum
Linimentum Iodi
  ,, Potassii Iodidi cum Sapone
  ,, Terebinthinæ
Liquor Arsenicalis
  ,, Iodi
  ,, Potassæ
  ,, ,, Effervescens
  ,, Potassii Permanganatis
Mistura Ferri Composita
Pilula Colocynthidis Composita
  ,, Colocynthidis et Hyoscyami
Pulvis Ipecacuanhæ Compositus
  ,, Jalapæ Compositus
Potassa Caustica
Potassa Sulphurata
Potassii Acetas
  ,, Bicarbonas
  ,, Bichromas
  ,, Bromidum
  ,, Carbonas
  ,, Chloras
  ,, Citras
  ,, Cyanidum
  ,, Ferrocyanidum
  ,, Iodidum
  ,, Nitras
  ,, Permanganas
  ,, Sulphas
  ,, Tartras
  ,, Tartras Acida
Sapo Mollis
Soda Tartarata
Trochisci Potassii Chloratis
Unguentum Antimonii Tartarati
  ,, Iodi
  ,, Potassæ Sulphuratæ
  ,, Potassii Iodidi
Vinum Antimoniale

POTASSA SULPHURATA.

Sulphurated Potash.

Synonyms.—**Hepar Sulphuris; Potassii Sulphuretum.**

A mixture of salts of potassium, of which the chief is sulphide.

Take of

Carbonate of Potassium, in powder . .	10 ounces
Sublimed Sulphur	5 ounces

Mix the carbonate of potassium, dried, and the sulphur in a warm mortar, and, having introduced them into a Cornish or Hessian crucible, let this be heated, first gradually until effervescence has ceased, and finally to dull redness, so as to produce perfect fusion. Let the liquid contents of the crucible be then poured out on a clean flagstone, and covered quickly with an inverted porcelain basin so as to exclude currents of air while solidification is taking place. The solid product thus obtained should, when cold, be broken into fragments, and immediately enclosed in a green-glass bottle, furnished with an air-tight stopper.

Characters and Tests.—Solid greenish fragments, liver-brown when recently broken, alkaline, and acrid to the taste, readily forming with water a yellow solution, which has the odour of sulphuretted hydrogen and evolves it freely when excess of hydrochloric acid is dropped into it, sulphur being at the same time deposited. The acid fluid when boiled and filtered is precipitated yellow by perchloride of platinum, and white by chloride of barium. About 50 per cent. of sulphurated potash is dissolved by rectified spirit.

Preparation.—Unguentum Potassæ Sulphuratæ.

POTASSII ACETAS.

Acetate of Potassium.

Synonyms.—Potassæ Acetas; Acetate of Potash.

$KC_2H_3O_2$.

Take of

Carbonate of Potassium . .	20 ounces
Acetic Acid	2 pints, or a sufficiency

To the acetic acid add gradually the carbonate of potassium, filter; acidulate, if necessary, with a few additional drops of the acid, and, having evaporated the liquid to dryness in a thin porcelain basin, raise the heat cautiously so as to liquefy the product. Allow the basin to cool, and when the salt has solidified, and while it is still warm, break it into fragments and put it into stoppered bottles.

Characters and Tests.—White foliaceous satiny masses, very deliquescent, with a watery solution of which tartaric acid gives a crystalline precipitate, sulphuric acid causes the disengagement of acetic acid, and a dilute solution of perchloride of iron strikes a deep red colour. Neutral to test-paper, almost entirely soluble in rectified spirit. Its solution is unaffected by sulphydrate of ammonium.

Dose.—10 to 60 grains.

POTASSII BICARBONAS.

Bicarbonate of Potassium.

Synonyms.—Potassæ Bicarbonas; Bicarbonate of Potash; Acid Carbonate of Potassium.

$KHCO_3$.

This salt may be obtained by saturating a strong aqueous solution of carbonate of potassium with carbonic acid gas, and recrystallising the separated salt.

Characters and Tests.—Colourless right rhombic prisms, not deliquescent, of a saline feebly alkaline taste, not corrosive. Diluted hydrochloric acid causes strong effervescence, forming a solution with which perchloride of platinum gives a yellow precipitate. Fifty grains exposed to a low red heat leave thirty-four and a half grains of a white residue, which requires for exact saturation 500 grain-measures of the volumetric solution of oxalic acid.

20 grains of Bicarbonate of Potassium	neutralise	14 grains Citric Acid, or 15 grains Tartaric Acid

Dose.—10 to 40 grains.

Preparation containing Bicarbonate of Potassium.

Liquor Potassæ Effervescens . 30 grains in 1 pint

POTASSII BICHROMAS.

Bichromate of Potassium.

Synonyms.—**Potassæ Bichromas; Bichromate of Potash; Red Chromate of Potassium; Anhydrochromate of Potassium.**

K_2CrO_4,CrO_3.

Characters and Tests.—In large red transparent four-sided tables; anhydrous; fuses below redness; at a higher temperature is decomposed, yielding green oxide of chromium and yellow chromate of potassium, which may be separated by dissolving the latter in water. The bichromate dissolved in water gives a yellowish-white precipitate with chloride of barium, and a purplish-red precipitate with nitrate of silver, and both these precipitates are soluble in diluted nitric acid. The aqueous solution digested with sulphuric acid and rectified spirit acquires an emerald-green colour.

Preparations for which Bichromate of Potassium is used.

Acidum Chromicum | Sodii Valerianas

POTASSII BROMIDUM.

Bromide of Potassium.

KBr.

May be obtained by the following process:—

Take of

Solution of Potash . . .	2 pints
Bromine	4 ounces, or a sufficiency
Wood Charcoal, in fine powder	2 ounces
Boiling Distilled Water	1½ pint

Put the solution of potash into a glass or porcelain vessel, and add bromine in successive portions, with constant agitation, until the mixture has acquired a permanent brown tint.

Evaporate to dryness; reduce the residue to a fine powder, and mix this intimately with the charcoal. Throw the mixture, in small quantities at a time, into a red-hot iron crucible, and when the whole has been brought to a state of fusion, remove the crucible from the fire and pour out its contents. When the fused mass has cooled, dissolve it in the water, filter the solution through paper, and set it aside to crystallise. Drain the crystals, and dry them in a warm place. More crystals may be obtained by evaporating the mother liquor and cooling. The salt should be kept in a stoppered bottle.

Characters and Tests.—In colourless cubical crystals, with no odour, but a pungent saline taste, readily soluble in water, less soluble in spirit. Its aqueous solution gives a white crystalline precipitate with tartaric acid. When its solution in water is mixed with a little chlorine, chloroform agitated with it, on falling to the bottom, exhibits a red colour. Ten grains requires for complete decomposition not less than 838 nor more than 850 grain-measures of the volumetric solution of nitrate of silver. A solution of the salt mixed with mucilage of starch and a drop of an aqueous solution of bromine or chlorine, does not exhibit any blue colour. The solution gives only a slight opacity with saccharated solution of lime or with solution of nitrate of barium, and diluted sulphuric acid causes no immediate yellow coloration.

Dose.—5 to 30 grains.

POTASSII CARBONAS.

Carbonate of Potassium.

Synonyms.—Potassæ Carbonas; Carbonate of Potash.

K_2CO_3 with about 16 per cent. of water of crystallisation.

Obtained from commercial pearl-ash, the product of lixiviation of wood-ashes, by treating the pearl-ash with its own weight of distilled water, and evaporating the solution so formed just to dryness while it is kept briskly agitated.

Characters and Tests.—A white crystalline powder, alkaline and caustic to the taste, very deliquescent, readily soluble in water but insoluble in spirit, effervescing with diluted hydrochloric acid, and forming a solution with which perchloride of platinum gives a yellow precipitate. Loses about sixteen per cent. of its weight when exposed to a red heat. When supersaturated with nitric acid and evaporated to dryness, the residue is almost entirely soluble in water, only a little silica remaining undissolved; and the solution is precipitated only faintly by chloride of barium or nitrate of silver. Eighty-three grains requires for neutralisation at least 980 grain-measures of the volumetric solution of oxalic acid.

20 grains of Carbonate of Potassium } neutralise { 17 grains Citric Acid, or
18 grains Tartaric Acid

Dose.—10 to 30 grains.

Preparations for which Carbonate of Potassium is used.

Atropina
Decoctum Aloes Compositum
Enema Aloes
Liquor Arsenicalis
,, Potassæ
Mistura Ferri Composita
Potassa Sulphurata
Potassii Acetas
,, Bicarbonas
,, Chloras
,, Citras
,, Ferrocyanidum
,, Tartras

POTASSII CHLORAS.

Chlorate of Potassium.

Synonyms.—Potassæ Chloras; Chlorate of Potash.

$KClO_3$.

May be obtained by the following process:—

Take of

Carbonate of Potassium . . .	20 ounces
Slaked Lime	53 ounces
Distilled Water	a sufficiency
Black Oxide of Manganese . . .	80 ounces
Hydrochloric Acid	24 pints

Mix the lime with the carbonate of potassium, and triturate them with a few ounces of the water so as to make the mixture slightly moist. Place the oxide of manganese in a large retort or flask, and having poured upon it the hydrochloric acid, diluted with six pints of water, heat gently on a sand-bath, and conduct the chlorine as it comes over, first through a bottle containing six ounces of water, and then into a large carboy containing the mixture of carbonate of potassium and slaked lime. When the whole of the chlorine has come over, remove the contents of the carboy, and boil them for twenty minutes with seven pints of the water; filter and evaporate till a film forms on the surface, and set aside to cool and crystallise. The crystals thus obtained are to be purified by dissolving them in three times their weight of boiling distilled water and again allowing the solution to crystallise.

In place of carbonate of potassium, chloride may be used.

Characters and Tests.—In colourless rhomboidal crystalline plates, with a cool saline taste, sparingly soluble in cold water. It explodes when triturated with sulphur or sulphides. Its solution is not affected by nitrate of silver or oxalate of ammonium. By heat it fuses, gives off oxygen gas, and leaves a white residue, readily forming with water a neutral solution, which is precipitated white by nitrate of silver, and yellow by perchloride of platinum.

Dose.—10 to 30 grains.

Preparations for which Chlorate of Potassium is used.

Potassii Permanganas	
Trochisci Potassii Chloratis .	5 grains in each lozenge

POTASSII CITRAS.

Citrate of Potassium.

Synonyms.—Potassæ Citras; Citrate of Potash.

$K_3C_6H_5O_7$.

Take of

Carbonate of Potassium .	8 ounces, or a sufficiency
Citric Acid, in crystals .	6 ounces, or a sufficiency
Distilled Water . .	2 pints

Dissolve the citric acid in the water, add the carbonate of potassium gradually, and, if the solution be not neutral, make it so by the cautious addition of the acid or the carbonate of potassium. Then filter, and evaporate to dryness, stirring constantly after a pellicle has begun to form, till the salt granulates. Triturate in a dry warm mortar, and preserve the powder in stoppered bottles.

Characters and Tests.—A white powder of saline feebly acid taste, deliquescent, and very soluble in water. Heated with sulphuric acid it forms a brown fluid, gives off an inflammable gas, and evolves the odour of acetic acid. Its dilute solution, mixed with a solution of chloride of calcium, remains nearly clear till it is boiled, when a white precipitate separates, readily and almost entirely soluble in acetic acid. Its solution, acidulated with hydrochloric acid, gives a yellow precipitate with perchloride of platinum. 102 grains heated to redness till gases cease to be evolved leaves an alkaline residue, which when treated with distilled water, filtered, and well washed, yields a clear solution requiring for exact neutralisation 1000 grain-measures of the volumetric solution of oxalic acid.

Dose.—20 to 60 grains.

POTASSII CYANIDUM.

Cyanide of Potassium.

KCN.

May be obtained by heating ferrocyanide of potassium at a red heat until gas ceases to be evolved, allowing the sediment to subside in the still molten mass, and pouring off the clear fluid. It may be purified, if necessary, by solution in and crystallisation from spirit.

Characters and Tests.—In white opaque deliquescent crystalline masses having the odour of hydrocyanic acid. It is readily soluble in water, and sparingly but almost entirely in absolute alcohol. The aqueous solution has an alkaline reaction; it yields no precipitate with ferrocyanide of potassium. The alcoholic solution gives no precipitate with chloride of barium. Ten grains dissolved in an ounce of distilled water requires about 730 grain-measures of volumetric solution of nitrate of silver to be added before a permanent precipitate begins to form, corresponding to about 95 per cent. of real cyanide of potassium. It is intensely poisonous.

Preparation for which Cyanide of Potassium is employed.

Bismuthum Purificatum

POTASSII FERROCYANIDUM.

Ferrocyanide of Potassium.

Synonyms.—Potassæ Prussias Flava; Yellow Prussiate of Potash.

$K_4FeC_6N_6,3H_2O.$

A salt obtained by fusing animal substances, such as the cuttings of horns, hoofs, and skins, with carbonate of potassium and iron, in an iron pot, lixiviating the crude product with water, and purifying the salt by crystallisation.

Characters and Tests.—In large yellow crystals, permanent in the air, soluble in water, insoluble in alcohol. The aqueous solution precipitates deep-blue with persulphate of iron, brick-red with sulphate of copper, and white with acetate of lead. Heated with diluted sulphuric acid, hydrocyanic acid vapours are evolved.

Preparations for which Ferrocyanide of Potassium is used.

Acidum Hydrocyanicum Dilutum
Potassii Cyanidum

POTASSII IODIDUM.

Iodide of Potassium.

KI.

May be obtained by the following process:—

Take of

Solution of Potash	1 gallon
Iodine	21 ounces, or a sufficiency
Wood Charcoal, in fine powder	3 ounces
Boiling Distilled Water	a sufficiency

Put the solution of potash into a glass or porcelain vessel, and add iodine in small quantities at a time with constant agitation, until the solution acquires a permanent brown tint. Evaporate the whole to dryness in a porcelain dish, pulverise the residue, and mix this intimately with the charcoal. Throw the mixture, in small quantities at a time, into a red-hot iron crucible, and, when the whole has been brought to a state of fusion, remove the crucible from the fire and pour out its contents. When the fused mass has cooled, dissolve it in two pints of boiling distilled water, filter through paper, wash the filter with a little boiling distilled water, unite the liquids, and evaporate the whole till a film forms on the surface. Set it aside to cool and crystallise. Drain the crystals, and dry them quickly in a warm place. More crystals may be obtained by evaporating the mother liquor and cooling. The salt should be kept in a stoppered bottle.

Characters and Tests.—In colourless, generally opaque, cubic crystals, readily soluble in water, and in a less degree in spirit. It commonly has a feeble alkaline reaction; its solution mixed with mucilage of starch gives a blue colour on the addition of a minute quantity of solution of chlorine. It gives a crystalline precipitate with tartaric acid. The addition of tartaric acid and mucilage of starch to its watery solution does not develope a blue colour. Solution of nitrate of silver added in excess forms a yellowish-white precipitate, which, when agitated with ammonia, yields by subsidence a clear liquid in which excess of nitric acid causes very little turbidity. Its aqueous solution is only faintly precipitated by the addition of saccharated solution of lime. Ten grains requires for complete precipitation about 602 grain-measures of the volumetric solution of nitrate of silver.

Dose.—2 to 20 grains.

Preparations containing Iodide of Potassium.

Linimentum Iodi .	22 grains in 1 fluid ounce, nearly
,, Potassii Iodidi cum Sapone	$54\frac{1}{2}$ grains in 1 fluid ounce, nearly
Liquor Iodi . .	33 grains in 1 fluid ounce
Tinctura Iodi . .	11 grains in 1 fluid ounce, nearly
Unguentum Iodi .	16 grains in 1 ounce, nearly
,, Potassii Iodidi . . .	1 part in $8\frac{3}{4}$, nearly

POTASSII NITRAS.

Nitrate of Potassium.

Synonyms.—Potassæ Nitras; Nitrate of Potash.

KNO_3.

Nitrate of potassium of commerce, purified, if necessary, by crystallisation from solution in distilled water.

Characters and Tests.—In white crystalline masses or fragments of striated six-sided prisms, colourless, of a peculiar cool saline taste. Thrown on the fire it deflagrates; warmed in a test-tube with sulphuric acid and copper wire it evolves ruddy fumes. Its solution acidulated with hydrochloric acid gives a yellow precipitate with perchloride of platinum. Its solution is not affected by chloride of barium or nitrate of silver.

Dose.—10 to 30 grains.

Preparation.—Argenti et Potassii Nitras.

POTASSII PERMANGANAS.

Permanganate of Potassium.

Synonyms.—Potassæ Permanganas; Permanganate of Potash.

$KMnO_4$.

Take of

Caustic Potash	5 ounces
Black Oxide of Manganese, in fine powder	4 ounces
Chlorate of Potassium	3½ ounces
Distilled Water	2½ pints
Carbonic Acid	a sufficiency

Reduce the chlorate of potassium to fine powder, and mix it with the oxide of manganese; put the mixture into a porcelain basin, and add to it the caustic potash, previously dissolved in four ounces of the water. Evaporate to dryness on a sand-bath, stirring diligently to prevent spurting. Pulverise the residual mass, and place the powder in a covered crucible, exposing it to a dull red heat for an hour, or until it has assumed a semifused condition. Let it cool, pulverise it, and boil with a pint and a half of the water. Let the insoluble matter subside, decant the fluid, boil again with half a pint of the water, again decant, saturate the united liquors with carbonic acid, and evaporate till a pellicle forms. Set aside to cool and crystallise. Drain the crystalline mass, boil it in six ounces of the water, and strain through a funnel the throat of which is lightly obstructed by a little asbestos. Let the fluid cool and crystallise, drain the crystals and dry them by placing them under a bell-jar over a vessel containing sulphuric acid.

Characters and Tests.—Dark purple slender prismatic crystals, inodorous, with a sweet astringent taste, soluble in water. A single small crystal suffices to form with an ounce of water a rich purple solution, which, when mixed with a little rectified spirit and heated, becomes yellowish-brown. The crystals heated to redness decrepitate, evolve oxygen gas, and leave a black residue, from which water extracts potash, recognised by its alkaline reaction, and by its giving, when acidulated with hydrochloric acid, a yellow precipitate with perchloride of platinum. Entirely soluble in cold water. Five grains dissolved in water requires for complete decoloration a solution of forty-four grains of granulated sulphate of iron acidulated with two fluid drachms of diluted sulphuric acid.

Dose.—1 to 5 grains.

Preparation.

Liquor Potassii Permanganatis .	4 grains in 1 fluid ounce

POTASSII SULPHAS.

Sulphate of Potassium.

Synonyms.—Potassæ Sulphas; Sulphate of Potash.

K_2SO_4.

Characters and Tests.—In colourless hard six-sided prisms terminated by six-sided pyramids; decrepitates strongly when heated; sparingly soluble in water; insoluble in alcohol. The aqueous solution is neutral to test-paper, gives no precipitate with oxalate of ammonium, but acidulated with hydrochloric acid it is precipitated white by chloride of barium, and yellow by perchloride of platinum.

Dose.—15 to 60 grains.

Preparations containing Sulphate of Potassium.

Pilula Colocynthidis Composita .	1 part in 24, nearly
,, ,, et Hyoscyami .	1 part in 36, nearly
,, Ipecacuanhæ cum Scilla .	1 part in 8, nearly
Pulvis Ipecacuanhæ Compositus .	4 parts in 5

POTASSII TARTRAS.

Tartrate of Potassium.

Synonyms.—Potassæ Tartras; Tartrate of Potash.

$K_2C_4H_4O_6,H_2O$.

Take of

Acid Tartrate of Potassium .	20 ounces, or a sufficiency
Carbonate of Potassium .	9 ounces, or a sufficiency
Boiling Distilled Water .	2½ pints

Dissolve the carbonate of potassium in the water; add by degrees the acid tartrate of potassium; and if, after a few minutes' boiling, the liquid is not neutral to test-paper, make it so by the careful addition of more of the carbonate or of the acid tartrate. Then filter, concentrate till a pellicle forms on the surface, and set it aside to cool and crystallise. More crystals may be obtained by evaporating and cooling the mother liquor. Drain the crystals, dry them by exposure to the air in a warm place, and preserve them in a stoppered bottle.

Characters and Tests.—In small colourless four- or six-sided prisms. Heated with sulphuric acid it forms a black tarry fluid, evolving inflammable gas and the odour of burned sugar. Acetic acid added sparingly to its aqueous solution, unless very dilute, causes the separation of a white crystalline precipitate. Entirely dissolved by its own weight of water. 122 grains, heated to redness till gases cease to be evolved, leaves an alkaline residue, which when treated with distilled water, filtered, and well washed, yields a clear solution requiring for exact neutralisation 990 grain-measures of the volumetric solution of oxalic acid.

Dose.—60 grains to ½ ounce.

POTASSII TARTRAS ACIDA.

Acid Tartrate of Potassium.

Synonyms.—**Potassæ Bitartras; Bitartrate of Potash; Potassæ Tartras Acida; Acid Tartrate of Potash; Cream of Tartar.**

$KHC_4H_4O_6$.

An acid salt obtained from the crude tartar which is deposited during the fermentation of grape juice, and from the lees of wine.

Characters and Tests.—A gritty white powder, or fragments of cakes crystallised on one surface; of a pleasant acid taste, sparingly soluble in water, insoluble in spirit. Heated in a crucible it evolves inflammable gas and the odour of burned sugar, and leaves a black residue. This effervesces with diluted hydrochloric acid, and forms a solution which when filtered gives a yellow precipitate with perchloride of platinum, and when neutralised by ammonia is usually rendered somewhat turbid by oxalic acid. Dried on a water-bath, 204 grains, heated to redness till gas ceases to be evolved, leaves an alkaline residue, which, when treated with distilled water, filtered, and well washed, yields a clear solution requiring for exact neutralisation at least 1000 grain-measures of the volumetric solution of oxalic acid.

Dose.—20 to 60 grains.

Preparations for which Acid Tartrate of Potassium is used.

Acidum Tartaricum
Antimonium Tartaratum
Confectio Sulphuris
Ferrum Tartaratum
Potassii Tartras
Pulvis Jalapæ Compositus
Soda Tartarata

PRUNUM.

Prune.

The dried drupe of Prunus domestica, *Linn.*, *var.* Juliana, *DC.*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 96. Imported from the South of France.

Characters.—Somewhat ovoid or oblong, about one inch and a quarter long, black, shrivelled; pulp brownish, without marked odour, but with a sweet and somewhat mucilaginous acidulous taste.

Preparation.—Confectio Sennæ, 1 part in 12½.

PTEROCARPI LIGNUM.

Red Sandal-Wood.

Synonym.—Red Sanders-Wood.

The sliced or rasped heart-wood of Pterocarpus santalinus, *Linn. fil.*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 82.

Characters.—As imported it is in dense heavy irregular logs varying in length and thickness, dark reddish-brown or blackish-brown externally, and internally, if cut transversely, deep blood-red variegated with zones of a lighter red colour. It is usually found in the pharmacies in the form of raspings or small chips, which are deep reddish-brown in colour, very slightly astringent in taste, and when rubbed of a faint peculiar odour.

Preparation.—Tinctura Lavandulæ Composita.

PULVIS AMYGDALÆ COMPOSITUS.

Compound Powder of Almonds.

Take of

Sweet Almonds . .	8 ounces	. . or . .	8 parts
Refined Sugar, in powder .	4 ounces	. . ,, . .	4 parts
Gum Acacia, in powder .	1 ounce	. . ,, . .	1 part

Steep the almonds in water until their skins can easily be removed; and, when blanched, dry them thoroughly with a soft cloth, and rub them lightly in a mortar to a smooth consistence. Mix the gum and the sugar; and adding them to the almond pulp gradually, rub the whole to a coarse powder. Keep it in a lightly covered jar.

Preparation.

Mistura Amygdalæ . . . 1 ounce to 8 fluid ounces

PULVIS ANTIMONIALIS.

Antimonial Powder.

Take of

Oxide of Antimony	1 ounce	or	1 part
Phosphate of Calcium	2 ounces	,,	2 parts

Mix them thoroughly.

Dose.—3 to 5 grains.

PULVIS CATECHU COMPOSITUS.

Compound Powder of Catechu.

Take of

Catechu, in powder	4 ounces	or	4 parts
Kino, in powder	2 ounces	,,	2 parts
Rhatany Root, in powder	2 ounces	,,	2 parts
Cinnamon Bark, in powder	1 ounce	,,	1 part
Nutmeg, in powder	1 ounce	,,	1 part

Mix them thoroughly, pass the powder through a fine sieve, and finally rub it lightly in a mortar. Keep it in a stoppered bottle.

Dose.—20 to 40 grains.

PULVIS CINNAMOMI COMPOSITUS.

Compound Powder of Cinnamon.

Synonym.—**Pulvis Aromaticus.**

Take of

Cinnamon Bark, in powder	1 ounce	or	1 part
Cardamom Seeds, in powder	1 ounce	,,	1 part
Ginger, in powder	1 ounce	,,	1 part

Mix them thoroughly, pass the powder through a fine sieve, and finally rub it lightly in a mortar. Keep it in a stoppered bottle.

Dose.—3 to 10 grains.

Preparations.

Pilula Aloes et Ferri	1 part in 3½
„ Cambogiæ Composita	1 part in 6, nearly

PULVIS CRETÆ AROMATICUS.

Aromatic Powder of Chalk.

Synonym.—Confectio Aromatica.

Take of

Cinnamon Bark, in powder	4 ounces	or	4 parts
Nutmeg, in powder	3 ounces	„	3 parts
Saffron, in powder	3 ounces	„	3 parts
Cloves, in powder	1½ ounce	„	1½ part
Cardamom Seeds, in powder	1 ounce	„	1 part
Refined Sugar, in powder	25 ounces	„	25 parts
Prepared Chalk	11 ounces	„	11 parts

Mix them thoroughly, pass the powder through a fine sieve, and finally rub it lightly in a mortar. Keep it in a stoppered bottle.

If a product of bright colour be desired, the saffron may previously be moistened and triturated with a little water or spirit, or the fresh and faintly damp mixture may be subjected to considerable pressure in the triturating process.

Dose.—10 to 60 grains.

PULVIS CRETÆ AROMATICUS CUM OPIO.

Aromatic Powder of Chalk and Opium.

Take of

Aromatic Powder of Chalk	9¾ ounces	or	39 parts
Opium, in powder	¼ ounce	„	1 part

Mix them thoroughly, pass the powder through a fine sieve, and finally rub it lightly in a mortar. Keep it in a stoppered bottle.

Dose.—10 to 40 grains.

PULVIS ELATERINI COMPOSITUS.

Compound Powder of Elaterin.

Take of

Elaterin	5 grains	or	1 part
Sugar of Milk	195 grains	,,	39 parts

Rub them together in a mortar until they are reduced to fine powder and intimately mixed.

Dose.—½ grain to 5 grains.

PULVIS GLYCYRRHIZÆ COMPOSITUS.

Compound Powder of Liquorice.

Synonym.—Pulvis Glycyrrhizæ Compositus cum Sulphure.

Take of

Senna, in fine powder	2 ounces	or	2 parts
Liquorice Root, in fine powder	2 ounces	,,	2 parts
Fennel Fruit, in fine powder	1 ounce	,,	1 part
Sublimed Sulphur	1 ounce	,,	1 part
Refined Sugar, in powder	6 ounces	,,	6 parts

Mix them thoroughly, pass the powder through a fine sieve, and finally rub it lightly in a mortar.

Dose.—30 to 60 grains.

PULVIS IPECACUANHÆ COMPOSITUS.

Compound Powder of Ipecacuanha.

Take of

Ipecacuanha, in powder	½ ounce	or	1 part
Opium, in powder	½ ounce	,,	1 part
Sulphate of Potassium, in powder	4 ounces	,,	8 parts

Mix them thoroughly, pass the powder through a fine sieve, and finally rub it lightly in a mortar. Keep it in a stoppered bottle.

Dose.—5 to 15 grains.

Preparation.

Pilula Ipecacuanhæ cum Scilla . . 3 parts in 7

PULVIS JALAPÆ COMPOSITUS.

Compound Powder of Jalap.

Take of

Jalap, in powder . . .	5 ounces	or	5 parts
Acid Tartrate of Potassium .	9 ounces	,,	9 parts
Ginger, in powder . .	1 ounce	,,	1 part

Mix them thoroughly, pass the powder through a fine sieve, and finally rub it lightly in a mortar.

Dose.—20 to 60 grains.

PULVIS KINO COMPOSITUS.

Compound Powder of Kino.

Take of

Kino, in powder . . .	3¾ ounces	or	15 parts
Opium, in powder . . .	¼ ounce	,,	1 part
Cinnamon Bark, in powder .	1 ounce	,,	4 parts

Mix them thoroughly, pass the powder through a fine sieve, and finally rub it lightly in a mortar. Keep it in a stoppered bottle.

Dose.—5 to 20 grains.

PULVIS OPII COMPOSITUS.

Compound Powder of Opium.

Take of

Opium, in powder . . .	1½ ounce	or	3 parts
Black Pepper, in powder .	2 ounces	,,	4 parts
Ginger, in powder . .	5 ounces	,,	10 parts
Caraway Fruit, in powder .	6 ounces	,,	12 parts
Tragacanth, in powder . .	½ ounce	,,	1 part

Mix them thoroughly, pass the powder through a fine sieve, and finally rub it lightly in a mortar. Keep it in a stoppered bottle.

Dose.—2 to 5 grains.

Preparation.—Confectio Opii, 1 part in 4.

PULVIS RHEI COMPOSITUS.

Compound Powder of Rhubarb.

Synonym.—Gregory's Powder.

Take of

Rhubarb Root, in powder	2 ounces	or	2 parts
Light Magnesia	6 ounces	,,	6 parts
Ginger, in powder	1 ounce	,,	1 part

Mix them thoroughly, pass the powder through a fine sieve, and preserve in a well-closed bottle in a dry place.

The more free the powdered rhubarb is from oil, and the more recently prepared the magnesia, the more readily will the powder mix with water. If a more condensed powder be desired, heavy magnesia may be employed.

Dose.—20 to 60 grains.

PULVIS SCAMMONII COMPOSITUS.

Compound Powder of Scammony.

Take of

Scammony Resin, in powder	4 ounces	or	4 parts
Jalap, in powder	3 ounces	,,	3 parts
Ginger, in powder	1 ounce	,,	1 part

Mix them thoroughly, pass the powder through a fine ve, and finally rub it lightly in a mortar.

Dose. –10 to 20 grains.

PULVIS TRAGACANTHÆ COMPOSITUS.

Compound Powder of Tragacanth.

Take of

Tragacanth, in powder	of each	1 ounce	or	1 part
Gum Acacia, in powder				
Starch, in powder				
Refined Sugar, in powder		3 ounces	,,	3 parts

Rub them well together.

Dose.—20 to 60 grains.

PYRETHRI RADIX.

Pellitory Root.

The dried root of Anacyclus Pyrethrum, *DC.*; *Bentl. and Trim. Med. Pl.* vol. iii. plate 151.

Characters.—In unbranched pieces, from two to four inches long, and from half to three-quarters of an inch thick, cylindrical or somewhat tapering, and covered by a thickish brown shrivelled bark studded by dark-coloured receptacles of resin. Breaks with a close fracture, the fractured surface presenting a radiated appearance. Inodorous, but when chewed causing a burning and pricking sensation over the whole mouth and throat.

Preparation.—Tinctura Pyrethri, 4 ounces to 1 pint.

PYROXYLIN.

Pyroxylin.

Take of

Cotton Wool		1 ounce
Sulphuric Acid	of each	5 fluid ounces
Nitric Acid		

Mix the acids in a porcelain mortar, immerse the cotton in the mixture, and stir it for three minutes with a glass rod until it is thoroughly wetted by the acids. Transfer the cotton to a vessel containing water, stir it well with a glass rod, decant the liquid, pour more water upon the mass, agitate again, and repeat the affusion, agitation, and decantation, until the washings cease to give a precipitate with chloride of barium. Drain the product on filtering paper, and dry in a water-bath.

Test.—Readily soluble in a mixture of ether and rectified spirit; leaves no residue when exploded by heat.

Preparations.—Collodium; Collodium Vesicans.

QUASSIÆ LIGNUM.

Quassia Wood.

The chips, shavings, or raspings of the wood of Picræna excelsa, *Lindl.* (Quassia excelsa, *Swartz*); *Bentl. and Trim. Med. Pl.* vol. i. plate 57.

Characters and Test.—In billets or logs varying in length and size, but frequently as thick as a man's thigh, and covered by a dark-grey bark. The wood is dense, tough, porous, and of a pale yellowish-white colour. In the pharmacies it is commonly met with in the form of chips, shavings, or raspings of the wood only, which are inodorous, but have an intense and purely bitter taste. An infusion does not become black or bluish-black on the addition of a persalt of iron.

Preparations.

Extractum Quassiæ	
Infusum Quassiæ . .	5·5 grains to 1 fluid ounce
Tinctura Quassiæ . .	$16\frac{1}{2}$ grains to 1 fluid ounce

QUERCŬS CORTEX.

Oak Bark.

The dried bark of the smaller branches and young stems of Quercus Robur, *Linn.* (Quercus pedunculata, *Ehr.*); *Bentl. and Trim. Med. Pl.* vol. iv. plate 248. Collected in spring, from trees growing in Britain.

Characters.—In quills covered with a smooth shining silvery or ash-grey variegated with brown corky layer; internally cinnamon-brown or brownish-red and longitudinally striated; fracture tough and fibrous; taste very astringent; no marked odour.

Preparation.—Decoctum Quercûs, 1¼ ounce to 1 pint.

QUININÆ HYDROCHLORAS.

Hydrochlorate of Quinine.

Synonyms.—Quiniæ Hydrochloras; Hydrochlorate of Quinia.

$C_{20}H_{24}N_2O_2HCl,2H_2O$.

Obtained from the same sources and by the same process as sulphate of quinine, the separated alkaloid being neutralised by hydrochloric acid.

Characters and Tests.—In crystals resembling those of sulphate of quinine, but generally somewhat larger. It is soluble in about thirty-four parts of water or about three parts of spirit at common temperatures, and very soluble in the boiling liquids. Its solution yields a green colour when treated with chlorine water and then with ammonia; with chloride of barium it gives only a faint turbidity; and with nitrate of silver a white precipitate insoluble in nitric acid. It may be converted into sulphate of quinine by dissolving it together with an equal weight of sulphate of sodium in ten times its weight of hot distilled water, and setting the mixture aside at 60° F. (15°·5 C.) for half an hour. Such sulphate should respond to the characters and tests that are mentioned under 'Quininæ Sulphas.' Dried at a temperature of 212° F. (100° C.), it loses nine per cent. of water.

Dose.—1 to 10 grains.

Preparation.—Tinctura Quininæ, 1 grain in 1 fluid drachm.

QUININÆ SULPHAS.

Sulphate of Quinine.

Synonyms.—**Quiniæ Sulphas; Sulphate of Quinia.**

$((C_{20}H_{24}N_2O_2)_2H_2SO_4)_2 15H_2O.$

The sulphate of an alkaloid prepared from the powder of various kinds of Cinchona and Remijia bark by extraction with spirit after the addition of lime, or by the action of alkali on an acidulated aqueous infusion, with subsequent neutralisation of the alkaloid by sulphuric acid and purification of the resulting salt.

Characters and Tests.—Filiform silky snow-white crystals, of a pure intensely bitter taste, sparingly soluble in water, that is, 1 part in 700 or 800 parts at common temperatures, yet imparting to the water a bluish tint or fluorescent appearance. Entirely soluble in water acidulated by sulphuric acid. Its solutions give with chloride of barium a white precipitate insoluble in nitric acid, or when treated first with solution of chlorine and afterwards with ammonia they become of an emerald-green colour, and solution of ammonia gives with them a white precipitate of quinine soluble in ether and in excess of the solution of ammonia. It dissolves in pure sulphuric acid with a feeble yellowish tint, and undergoes no further change of colour when gently warmed. Twenty-five grains of the freshly prepared salt should lose 3·8 grains of water by drying at 212° F. (100° C.) Ignited with free access of air, it burns without leaving any residue.

Test for Cinchonidine and Cinchonine.—Heat 100 grains of the sulphate of quinine in five or six ounces of boiling water, with three or four drops of diluted sulphuric acid. Set the solution aside until cold. Separate, by filtration, the purified sulphate of quinine which has crystallised out. To the filtrate, which should nearly fill a bottle or flask, add ether, shaking occasionally, until a distinct layer of ether remains undissolved. Add ammonia in very slight excess, and shake thoroughly, so that the quinine at first precipitated shall be redissolved. Set aside for some hours or during a night.

Remove the supernatant clear ethereal fluid, which should occupy the neck of the vessel, by a pipette. Wash the residual aqueous fluid and any separated crystals of alkaloid with a very little more ether, once or twice. Collect the separated alkaloid on a tared filter, wash it with a little ether, dry at 212° F. (100° C.), and weigh. Four parts of such alkaloid correspond to five parts of crystallised sulphate of cinchonidine or of sulphate of cinchonine.

Test for Quinidine.—Recrystallise fifty grains of the original sulphate of quinine as described in the previous paragraph. To the filtrate add solution of iodide of potassium, and a little spirit of wine to prevent the precipitation of amorphous hydriodates. Collect any separated hydriodate of quinidine, wash with a little water, dry, and weigh. The weight represents about an equal weight of crystallised sulphate of quinidine.

Test for Cupreine.—Shake the recrystallised sulphate of quinine, obtained in testing the original sulphate of quinine for cinchonidine and cinchonine, with one fluid ounce of ether and a quarter of an ounce of solution of ammonia, and to this ethereal solution, separated, add the ethereal fluid and washings also obtained in testing the original sulphate for the two alkaloids just mentioned. Shake this ethereal liquor with a quarter of a fluid ounce of a ten per cent. solution of caustic soda, adding water if any solid matter separates. Remove the ethereal solution. Wash the aqueous solution with more ether, and remove the ethereal washings. Add diluted sulphuric acid to the aqueous fluid heated to boiling, until the soda is exactly neutralised. When cold collect any sulphate of cupreine that has crystallised out on a tared filter; dry, and weigh.

'Sulphate of Quinine' should not contain much more than five per cent. of sulphates of other cinchona alkaloids.

Dose.—1 to 10 grains.

Preparations.

Ferri et Quininæ Citras . .	16 parts Quinine in 100
Tinctura Quininæ Ammoniata .	1 grain in 1 fluid drachm
Vinum Quininæ . . .	1 grain in 1 fluid ounce

RESINA.

Resin.

The residue left after the distillation of the oil of turpentine from the crude oleo-resin (turpentine) of various species of Pinus, *Linn.*

Characters.—Translucent, yellowish, compact, brittle, pulverisable; fracture shining; odour and taste faintly terebinthinate. It is easily fusible, and burns with a dense yellow flame and much smoke.

Preparations.

Charta Epispastica
Emplastrum Calefaciens
,, Cantharidis
,, Picis
Emplastrum Plumbi Iodidi
,, Resinæ
,, Saponis
Unguentum Resinæ
Unguentum Terebinthinæ

RHAMNI FRANGULÆ CORTEX.

Frangula Bark.

Synonym.—Cortex Frangulæ.

The dried bark of Rhamnus Frangula, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. i. plate 65. Collected from the young trunk and moderate-sized branches, and kept at least one year before being used.

Characters.—In small quills, the bark itself being about one twenty-fifth of an inch or somewhat more in thickness, and covered with a greyish-brown or blackish-brown corky layer marked with transverse whitish lenticels; inner surface smooth, brownish-yellow; fracture short and purplish externally, but somewhat fibrous and yellowish within. No marked odour; taste pleasant, sweetish, and slightly bitter.

Preparations.

Extractum Rhamni Frangulæ
,, ,, ,, Liquidum

RHAMNI PURSHIANI CORTEX.

Sacred Bark.

Synonym.—Cascara Sagrada.

The dried bark of Rhamnus Purshianus, *DC.*; *Hook. Flora Boreali-americana*, plate 43.

Characters.—In quills or incurved pieces of varying lengths and sizes, the bark itself being from about one twenty-fifth to one-eighth of an inch thick, smooth or nearly so externally, covered with a greyish-white layer, which is usually easily removed, and frequently marked with spots or patches of adherent lichens. Beneath the surface it is violet-brown, reddish-brown, or brownish; and internally reddish-brown or yellowish-brown, and nearly smooth, although somewhat striated longitudinally. Fracture short, except internally, where it is slightly fibrous, more especially in the larger pieces. No marked odour; taste bitter. It is frequently imported in flattened packets, consisting of small pieces of the bark compressed into a more or less compact mass.

Preparations.

Extractum Cascaræ Sagradæ
,, ,, ,, Liquidum

RHEI RADIX.

Rhubarb Root.

The root, more or less deprived of its bark, sliced and dried, of Rheum palmatum, *Linn.*; Rheum officinale, *Baillon*; and probably other species; *Bentl. and Trim. Med. Pl.* vol. iii. plates 213 and 214. Collected and prepared in China and Thibet.

Characters.—In somewhat cylindrical, barrel-shaped, conical, plano-convex, or irregularly formed pieces; the outer surface covered with a bright yellowish-brown powder, rounded or somewhat angular, smooth or more or less wrinkled, and marked beneath the powder with reddish-brown or dark rusty-brown lines, intermixed in a yellowish-brown substance, and frequently presenting small scattered starlike spots. Frequently the pieces are bored with a hole which contains the remains of the cord used to suspend them to dry, or the cord has been removed. Hard, compact, fracture uneven, presenting a marbled appearance, and in some cases exhibiting a ring of star-like spots. Odour peculiar and somewhat aromatic; taste bitter, feebly astringent, and when chewed it feels gritty between the teeth.

Dose.—5 to 20 grains.

Preparations.

Extractum Rhei	
Infusum Rhei . . .	11 grains to 1 fluid ounce
Pilula Rhei Composita .	1 part in 4, nearly
Pulvis Rhei Compositus	2 parts in 9
Syrupus Rhei	
Tinctura Rhei . . .	44 grains to 1 fluid ounce
Vinum Rhei . . .	33 grains to 1 fluid ounce

RHŒADOS PETALA.

Red-Poppy Petals.

The fresh petals of Papaver Rhœas, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. i. plate 19. From indigenous plants.

Characters.—Of a bright scarlet colour, often nearly black at the base, unequal in size, with a strong narcotic odour, and slightly bitter taste.

Preparation.—Syrupus Rhœados.

ROSÆ CANINÆ FRUCTUS.

Fruit of the Dog-Rose. Hips.

The ripe fruit of Rosa canina, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 103, and other indigenous allied species.

Characters.—Three-quarters of an inch or more in length, ovoid or somewhat oval, smooth, shining, scarlet or red; inodorous; taste pleasant, sweetish, acidulous.

Preparation.—Confectio Rosæ Caninæ.

ROSÆ CENTIFOLIÆ PETALA.

Cabbage-Rose Petals.

The fresh fully expanded petals of Rosa centifolia, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 105. From plants cultivated in Britain.

Characters.—Large, thin, delicate, very fragrant, and with a sweetish, slightly astringent, bitterish taste. Both odour and taste are readily imparted to water.

Preparation.—Aqua Rosæ, 10 pounds to 1 gallon.

ROSÆ GALLICÆ PETALA.

Red-Rose Petals.

The fresh and dried unexpanded petals of Rosa gallica, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 104. From plants cultivated in Britain.

Characters.—Usually in little cone-like masses, or sometimes separate and more or less crumpled; fine purplish-red, retained after drying, velvety; odour fragrant, roseate, especially developed by drying; taste bitterish, feebly acid, and astringent.

Preparations.

Confectio Rosæ Gallicæ .	1 part fresh petals in 4
Infusum Rosæ Acidum .	½ ounce dried petals to 1 pint
Syrupus Rosæ Gallicæ	

SABADILLA.

Cevadilla.

The dried ripe seeds of Schœnocaulon officinale, *A. Gray* (Asagræa officinalis, *Lindl.*) ; *Bot. Reg.* vol. xxv. plate 33. The seeds are sometimes imported in, or mixed with, their pericarps, but these should be rejected before the seeds are used.

Characters.—About one-quarter of an inch or less in length, narrow, fusiform or somewhat scimitar-shaped, prolonged above into a membranous wing, somewhat compressed, shining, wrinkled, blackish-brown. Taste bitter, acrid ; inodorous, but when powdered producing violent sneezing.

Preparation.—Veratrina.

SABINÆ CACUMINA.

Savin Tops.

The fresh and dried tops of Juniperus Sabina, *Linn.* ; *Bentl. and Trim. Med. Pl.* vol. iv. plate 254. Collected in spring, from plants cultivated in Britain.

Characters.—Twigs densely covered with minute imbricated adpressed dark green (or when dried yellowish-green) leaves, with a large oval depressed central gland on their back. Odour, when rubbed or bruised, strong and peculiar ; taste acrid, bitter, and disagreeable.

Dose, in powder.—4 to 10 grains.

Preparations.

Oleum Sabinæ, from fresh plant	
Tinctura Sabinæ .	$2\frac{1}{2}$ ounces, dried, to 1 pint
Unguentum Sabinæ .	8 ounces, fresh, to 19 ounces

SACCHARUM LACTIS.

Sugar of Milk.

$C_{11}H_{24}O_{12}$.

A crystallised sugar, obtained from the whey of Milk by evaporation.

Characters.—Usually in cylindrical masses, two inches in diameter, with a cord or stick in the axis, or in fragments of cakes; greyish-white, crystalline on the surface and in its texture, translucent, hard, scentless, faintly sweet, gritty when chewed. Soluble in about seven parts of water at common temperatures, and in about one part of boiling water.

Preparation.—Pulvis Elaterini Compositus.

SACCHARUM PURIFICATUM.

Refined Sugar.

Synonym.—Sucrose.

$C_{12}H_{22}O_{11}$.

Characters and Tests.—Compact crystalline conical loaves, known in commerce as lump sugar. Readily and completely soluble in water, forming a clear bright syrup which yields no red or yellowish precipitate, or scarcely a trace, on heating it to near the boiling point of water for a short time with a little solution of sulphate of copper and excess of solution of potash.

Preparations.

Confectio Rosæ Caninæ
,, ,, Gallicæ
,, Sennæ
Extractum Sarsæ Liquidum
Ferri Carbonas Saccharata
Liquor Calcis Saccharatus
Mistura Ferri Composita
,, Guaiaci
,, Spiritus Vini Gallici
Pilula Ferri Iodidi
Pulvis Amygdalæ Compositus
,, Cretæ Aromaticus
,, Glycyrrhizæ Compositus
,, Tragacanthæ Compositus
Sodii Citro-tartras Effervescens

All the Syrups and Lozenges

SALICINUM.

Salicin.

$C_{13}H_{18}O_7$.

A crystalline glucoside obtained by treating the bark of Salix alba, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iv. plate 234; and other species of Salix, *Linn.*; and the bark of various species of Populus, *Linn.*, with hot water, removing tannin and colouring matter from the decoction, evaporating, purifying, and recrystallising.

Characters and Tests.—Colourless shining crystals with a very bitter taste. Soluble in about twenty-eight parts of water or a similar quantity of spirit at common temperatures; insoluble in ether. Sulphuric acid colours it red. A small quantity heated with a little red chromate of potassium, a few drops of sulphuric acid and some water, yields vapours of an oil having the odour of meadow-sweet. The crystals melt when heated, and emit vapours having the odour of meadow-sweet. On ignition in air it leaves no residue.

Dose.—3 to 20 grains.

SAMBUCI FLORES.

Elder Flowers.

The fresh flowers of Sambucus nigra, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 137. From indigenous plants.

Characters.—In corymbose cymes, from five to seven inches across. Flowers small; calyx superior, five-toothed; corolla flat, rotate, five-sected, creamy-white, with five stamens inserted in the tube. Odour fragrant, but somewhat sickly; taste bitterish.

Preparation.—Aqua Sambuci, 10 pounds to 1 gallon.

SANTONICA.

Santonica.

The dried unexpanded flower-heads or capitula of Artemisia maritima, *var.* Stechmanniana, *Besser* (Artemisia pauciflora, *Weber*); *Bentl. and Trim. Med. Pl.* vol. iii. plate 157.

Characters.—About one-tenth of an inch in length, oblong-ovoid, obtuse, pale greenish-brown, nearly smooth; resembling seeds in appearance, but consisting of from twelve to eighteen imbricated involucral scales with a broad thick yellowish-green midrib, enclosing three to five somewhat tubular florets. Odour, more especially when rubbed, strong, peculiar, and somewhat camphoraceous; taste bitter and camphoraceous.

Dose.—10 to 60 grains.

Preparation.—Santoninum.

SANTONINUM.

Santonin.

$C_{15}H_{18}O_3$.

A crystalline principle prepared from Santonica. It may be obtained by the following process:—

Take of

Santonica, bruised	1 pound
Slaked Lime	7 ounces
Hydrochloric Acid	a sufficiency
Solution of Ammonia . . .	$\frac{1}{4}$ fluid ounce
Rectified Spirit	14 fluid ounces
Purified Animal Charcoal . . .	60 grains
Distilled Water	a sufficiency

Boil the santonica with a gallon of the water and five ounces of the lime in a copper or tinned iron vessel for an hour, strain through a stout cloth, and express strongly. Mix the residue with half a gallon of the water and the rest of the lime, boil for half an hour, strain and express as before. Mix the strained liquors, let them settle, decant the fluid from the deposit, and evaporate to the bulk of two pints and a half. To the liquor while hot, add, with diligent stirring, the hydrochloric acid until the fluid has become slightly and permanently acid, and set it aside for five days that the precipitate may subside. Remove, by skimming, any oily matter which floats on the surface, and carefully decant the greater part of the fluid from the precipitate. Collect this on a paper filter, wash it first with cold distilled water till the washings pass colourless and nearly free from acid reaction, then with the solution of ammonia previously diluted with five fluid ounces of the water, and lastly with cold distilled water till the washings pass colourless. Press the filter containing the precipitate between folds of filtering paper, and dry it in a warm place. Scrape the dry precipitate from the filter, and mix it with the animal charcoal. Add to the mixture nine ounces of the rectified spirit, digest for half an hour, and boil for ten minutes. Filter while hot, wash the charcoal with an ounce of boiling spirit, and set the filtrate aside for two days in a cool dark place to crystallise. Separate the mother liquor from the crystals, and concentrate to obtain a further product. Collect the crystals, let them drain, redissolve them in four ounces of boiling spirit, and let the solution crystallise as before. Lastly, dry the crystals on filtering paper in the dark, and preserve them in a bottle protected from light.

Characters and Tests.—Colourless flat rhombic prisms, feebly bitter, fusible and sublimable when gently heated, scarcely soluble in cold water, sparingly in boiling water, but abundantly in chloroform and in boiling rectified spirit. Added to warm alcoholic solution of potash it yields a violet-red colour. Sunlight renders it yellow; not dissolved by diluted mineral acids. Ignited with free access of air, it burns without leaving any residue.

Dose.—2 to 6 grains.

Preparation.

Trochisci Santonini . . . 1 grain in each lozenge

SAPO ANIMALIS.

Curd Soap.

Soap made with soda and a purified animal fat consisting principally of stearin.

Characters and Tests.—White or with a very light greyish tint; dry; nearly inodorous; horny and pulverisable when kept in dry warm air. Easily moulded when heated. Soluble in rectified spirit. Soluble also in hot water, the solution being neutral or only very faintly alkaline to test-paper. It does not impart a greasy stain to paper. Incinerated it yields an ash which does not deliquesce.

Preparations in which Curd Soap is used.

Emplastrum Resinæ
,, Saponis
,, ,, Fuscum
Extractum Colocynthidis Compositum
Linimentum Potassii Iodidi cum Sapone
Pilula Phosphori
,, Scammonii Composita
Suppositoria Acidi Carbolici cum Sapone
,, ,, Tannici cum Sapone
,, Morphinæ cum Sapone

SAPO DURUS.

Hard Soap.

Synonym.—White Castile Soap.

Soap made with soda and olive oil.

Characters.—Greyish-white, dry, inodorous; horny and pulverisable when kept in dry warm air. Easily moulded when heated. Soluble in rectified spirit. Soluble also in hot water, the solution being neutral or only faintly alkaline to test-paper. It does not impart a greasy stain to paper. Incinerated it yields an ash which does not deliquesce.

Preparations.

Linimentum Saponis
Pilula Aloes Barbadensis
,, ,, et Asafœtidæ
,, ,, Socotrinæ
Pilula Cambogiæ Composita
,, Rhei Composita
,, Saponis Composita
,, Scillæ Composita

SAPO MOLLIS.

Soft Soap.

Soap made with potash and olive oil.

Characters.—Yellowish-green, inodorous, of a gelatinous consistence. Soluble in rectified spirit; not imparting an oily stain to paper. Incinerated it yields an ash which is very deliquescent.

Preparation.

Linimentum Terebinthinæ .	2 parts in 17½, nearly

SARSÆ RADIX.

Jamaica Sarsaparilla.

The dried root of Smilax officinalis, *Kunth.*; *Bentl. and Trim. Med. Pl.* vol. iv. plate 289. It is commonly known as Jamaica sarsaparilla from having been formerly obtained from Central America by way of that island.

Characters.—Six or more feet in length, usually bent or folded and packed together into bundles of about eighteen inches long, and four to five inches in diameter, the whole bound together by a long root of the same drug. Roots more or less furrowed, varying in thickness, but not exceeding that of a goose-quill, greyish-brown to deep reddish-brown, with numerous branched rootlets. Inodorous; taste mucilaginous, and when chewed feebly bitter and faintly acrid.

Preparations.

Decoctum Sarsæ . . .	2½ ounces to 1 pint
,, ,, Compositum	2½ ounces to 1 pint
Extractum Sarsæ Liquidum .	1 pound to 8 fluid ounces

SASSAFRAS RADIX.

Sassafras Root.

The dried root, reduced to chips or shavings, of Sassafras officinale, *Nees*; *Bentl. and Trim. Med. Pl.* vol. iii. plate 220.

Characters.—In large branched pieces more or less covered with bark. Bark rough and greyish-brown or rusty-brown externally; internally smooth, glistening, and rusty-brown, with an agreeable aromatic odour, and a peculiar aromatic somewhat astringent taste. Wood soft, light in weight, greyish-yellow or greyish-red, with a similar taste and odour to the bark, but more feeble.

Preparation.

Decoctum Sarsæ Compositum . ¼ ounce to 1 pint

SCAMMONIÆ RADIX.

Scammony Root.

The dried root of Convolvulus Scammonia, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iii. plate 187.

Characters and Test.—Unbranched, of varying lengths and sizes, cylindrical except towards its upper end where it is enlarged, and presents usually some remains of the slender aerial stems; more or less shrivelled, longitudinally furrowed, greyish-brown or yellowish externally, pale brown or whitish within, and when fractured small fragments of pale yellowish-brown resin may often be seen on the surface of the fracture. Odour and taste faint, somewhat resembling jalap. Rectified spirit agitated with the powder and evaporated leaves a residue having the properties of scammony resin.

Preparation.—Resina Scammoniæ.

SCAMMONIÆ RESINA.

Resin of Scammony.

Take of

Scammony Root, in coarse powder	8 ounces
Rectified Spirit	a sufficiency
Distilled Water	a sufficiency

Digest the scammony root with sixteen fluid ounces of the spirit in a covered vessel, moderately heated, for twenty-four hours; then transfer to a percolator, and, when the tincture ceases to pass, add more spirit, and let it percolate slowly until the root is exhausted. Add to the tincture four fluid ounces of the water, and distil off the spirit by a water-bath. Remove the residue while hot to an open dish, and allow it to become cold. Pour off the supernatant fluid from the resin, wash this several times with hot water, and dry it on a porcelain plate with the heat of a stove or water-bath.

It may also be prepared in a similar way from scammony.

Characters and Tests.—In brownish translucent pieces, brittle, resinous in fracture, of a sweet fragrant odour if prepared from the root. It cannot, alone, form an emulsion with water. Its tincture does not render the fresh-cut surface of a potato blue. Ether dissolves it entirely.

Dose.—3 to 8 grains.

Preparations.

Confectio Scammonii	1 part in 3, nearly
Extractum Colocynthidis Compositum	1 part in 7, nearly
Pilula Colocynthidis Composita	1 part in 3, nearly
,, Scammonii Composita	1 part in 3, nearly
Pulvis Scammonii Compositus	1 part in 2

SCAMMONIUM.

Scammony.

A gum-resinous exudation obtained by incision from the living root of Convolvulus Scammonia, *Linn.*, hardened in the air.

Characters and Tests.—As usually found in commerce it is in flattish cakes or pieces of irregular form and of varying sizes, ash-grey or blackish-brown externally, and sometimes sprinkled over with a greyish-white powder. It is very brittle, and when fractured the surface is resinous, shining, more or less porous, and of a uniform dark greyish-black colour; easily triturated into an ash-grey powder, which forms with water a smooth emulsion. Odour peculiar, cheesy; and when chewed causing a slight pricking sensation in the back of the throat. It does not effervesce with hydrochloric acid. A cooled decoction is not rendered blue by solution of iodine. Ether removes about 75 per cent. of resin; and what remains is chiefly soluble gum, with a little moisture.

Dose.—5 to 10 grains.

Preparations.

Mistura Scammonii .	3 grains in 1 fluid ounce
Resina Scammoniæ	

SCILLA.

Squill.

The bulb of Urginea Scilla, *Steinheil*; *Bentl. and Trim. Med. Pl.* vol. iv. plate 281; divested of its dry membranous outer scales, cut into slices, and dried.

Characters.—The slices as seen in the pharmacies are flattish or somewhat four-sided, curved, yellowish-white or somewhat pinkish, from about one to two inches long, translucent, inodorous, disagreeably bitter, brittle and easily pulverisable if quite dry, but tough and flexible when moist.

Dose, in powder.—1 to 3 grains.

Preparations.

Acetum Scillæ	2½ ounces to 1 pint, nearly
Oxymel Scillæ	
Pilula Ipecacuanhæ cum Scilla	1 part in 7
,, Scillæ Composita	1 part in 5
Syrupus Scillæ	
Tinctura Scillæ	2½ ounces to 1 pint

SCOPARII CACUMINA.

Broom Tops.

The fresh and dried tops of Cytisus scoparius, *Link.* (Sarothamnus scoparius, *Koch*); *Bentl. and Trim. Med. Pl.* vol. ii. plate 70. From indigenous plants.

Characters.—Branched, straight, with five wing-like angles, dark-green or yellowish-green, nearly smooth, tough. Leaves, when present, small, sessile and simple above, stalked and trifoliate below. Taste bitter and nauseous; odour when fresh and bruised peculiar, but this is nearly lost by drying.

Preparations.

Decoctum Scoparii	1 ounce (dried) to 1 pint
Succus Scoparii (fresh)	

SENEGÆ RADIX.

Senega Root.

The dried root of Polygala Senega, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. i. plate 29.

Characters.—Enlarged at the upper end into an irregular knotty tuberosity which bears the remains of numerous small stems, and tapering below into a more or less twisted or curved, branched, and usually keeled root, from one-fifth to more than one-third of an inch thick. Bark yellowish- or brownish-grey, transversely cracked, horny, translucent; enclosing an irregular whitish central woody column. Fracture short, brittle; odour of bark peculiar, rancid, and its taste at first sweetish, but afterwards very acrid, sourish, and causing a flow of saliva; wood tasteless and inodorous.

Preparations.

Infusum Senegæ . . .	1 ounce to 1 pint
Tinctura Senegæ . . .	2½ ounces to 1 pint

SENNA ALEXANDRINA.

Alexandrian Senna.

The dried leaflets of Cassia acutifolia, *Delile* (Cassia lanceolata, *Nectoux*); *Bentl. and Trim. Med. Pl.* vol. ii. plate 90. It is imported from Alexandria and sometimes in a more or less contaminated condition, in which case the true senna leaflets should be carefully separated from all extraneous matters.

Characters.—About three-quarters of an inch to more than an inch long, lanceolate or oval-lanceolate, acute, unequal at the base, entire, thin, brittle, pale yellowish-green, evidently veined on the lower surface, and very finely pubescent or nearly smooth. Odour peculiar, faint, tea-like; taste mucilaginous, nauseous, and sickly

Preparations.

Confectio Sennæ . . .	1 part in 11, about
Infusum Sennæ . . .	2 ounces to 1 pint
Mistura Sennæ Composita	
Pulvis Glycyrrhizæ Compositus	1 part in 6
Syrupus Sennæ . . .	1 ounce to 2 fluid ounces
Tinctura Sennæ . . .	2½ ounces to 1 pint

SENNA INDICA.

East Indian Senna.

Synonym.—Tinnivelly Senna.

The dried leaflets of Cassia angustifolia, *Vahl* (Cassia elongata, *Lem-Lisanc*); *Royle, Ill. Bot. Himal.* plate 37. From plants cultivated in Southern India; it is imported without admixture of other leaves or extraneous matters of any kind.

Characters.—From about one inch to two inches in length, lanceolate, acute, unequal-sided at the base, thin, entire, yellowish-green and smooth above, somewhat duller beneath, and glabrous or slightly pubescent. Odour and taste very similar to Alexandrian Senna.

Preparations.

May be used in place of Alexandrian Senna.

SERPENTARIÆ RHIZOMA.

Serpentary Rhizome.

Synonym.—Serpentariæ Radix.

The dried rhizome and rootlets of Aristolochia Serpentaria, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iv. plate 246; or of Aristolochia reticulata, *Nutt.*

Characters.—Rhizome twisted, about one inch long and one-eighth of an inch in diameter, marked above by the remains of former stems, and giving off below an interlacing tuft of numerous slender branched rootlets, of from two to four inches long; dull yellowish-brown. Odour aromatic, peculiar, camphoraceous; taste bitterish, aromatic, and somewhat camphoraceous.

The rhizome and rootlets of *Aristolochia reticulata* agree essentially with the above, but the rhizome is a little thicker, and the rootlets longer, coarser, and less matted together.

Preparations.

Infusum Serpentariæ . . .	½ ounce to 1 pint
Tinctura Cinchonæ Composita .	½ ounce to 1 pint
„ Serpentariæ . . .	2½ ounces to 1 pint

SEVUM PRÆPARATUM.

Prepared Suet.

The internal fat of the abdomen of the sheep, Ovis Aries, *Linn.*, purified by melting and straining.

Characters.—White, smooth, almost scentless; fusible at 103° F. (39°·4 C.)

Preparations.

Emplastrum Cantharidis | Unguentum Hydrargyri

SINAPIS.

Mustard.

Black Mustard seeds and White Mustard seeds powdered and mixed.

Characters and Test.—A greenish-yellow powder of an acrid bitterish oily pungent taste, scentless when dry, but exhaling when moist a pungent penetrating peculiar odour, very irritating to the nostrils and eyes. A decoction cooled is not made blue by tincture of iodine.

Preparations.

Cataplasma Sinapis | Charta Sinapis
Oleum Sinapis

SINAPIS ALBÆ SEMINA.

White Mustard Seeds.

The dried ripe seeds of Brassica alba, *Hook. fil. and Thomp.* (Sinapis alba, *Linn.*); *Bentl. and Trim. Med. Pl.* vol. i. plate 23. From plants cultivated in Britain.

Characters.—About one-twelfth of an inch in diameter, roundish, pale yellow, very finely pitted, hard; internally yellow, oily. Inodorous; taste pungent.

Preparation.—Sinapis.

SINAPIS NIGRÆ SEMINA.

Black Mustard Seeds.

The dried ripe seeds of Brassica nigra, *Koch* (Sinapis nigra, *Linn.*); *Bentl. and Trim. Med. Pl.* vol. i. plate 22. From plants cultivated in Britain.

Characters.—Scarcely half the size of white mustard seeds, or not more than about one twenty-fifth of an inch in diameter; roundish, dark reddish- or greyish-brown, finely pitted, hard; internally yellow. Inodorous when dry, even when powdered, but when triturated with water exhaling a strong pungent odour so as to affect the eyes; taste very pungent.

Preparation.—Sinapis.

SODA CAUSTICA.

Caustic Soda.

Synonyms.—Sodæ Hydras; Hydrate of Soda.

Hydrate of Sodium, NaHO, with some impurities.

Take of
Solution of Soda . . . . . 2 pints

Boil down the solution of soda rapidly in a silver or clean iron vessel, until there remains a fluid of oily consistence, a drop of which when removed on a warmed glass rod solidifies on cooling. Pour the fluid on a clean silver or iron plate, or into moulds, and, as soon as it has solidified, break it into pieces, and preserve it in stoppered green-glass bottles.

Characters and Tests.—Hard and greyish-white, very alkaline and corrosive. It imparts a yellow colour to flame, and its solution in water acidulated with nitric acid gives only scanty white precipitates with nitrate of silver and chloride of barium. Forty grains dissolved in water leaves scarcely any sediment, and requires for neutralisation about 900 grain-measures of the volumetric solution of oxalic acid.

Preparation containing Caustic Soda.

Liquor Sodæ . .	18·8 grains in 1 fluid ounce

SODA TARTARATA.

Tartarated Soda.

$NaKC_4H_4O_6,4H_2O$.

Synonyms.—Sodæ et Potassæ Tartras; Sodæ Potassio-tartras; Tartrate of Potassium and Sodium; Rochelle Salt.

Take of

Acid Tartrate of Potassium, in powder	16 ounces, or a sufficiency
Carbonate of Sodium	12 ounces, or a sufficiency
Boiling Distilled Water . . .	4 pints

Dissolve the carbonate of sodium in the water, add gradually the acid tartrate of potassium, and, if after being boiled for a few minutes the liquid has an acid or alkaline reaction, add a little carbonate of sodium or acid tartrate of potassium till a neutral solution is obtained. Boil and filter; concentrate the liquor till a pellicle forms on the surface, and set it aside to crystallise. More crystals may be obtained by again evaporating as before.

Characters and Tests.—In colourless transparent prisms or halves of prisms of the right rhombic order, generally eight-sided; tasting like common salt. Heated with sulphuric acid it blackens, evolving inflammable gases and the odour of burnt sugar. It imparts a yellow colour to flame. A strong solution gives a crystalline precipitate with a small quantity of acetic acid. Entirely soluble in cold water. 141 grains heated to redness till gases cease to be evolved, leaves an alkaline residue which, when treated with distilled water, filtered, and well washed, yields a clear solution requiring for neutralisation 990 grain-measures of the volumetric solution of oxalic acid.

Dose.—¼ to ½ ounce.

SODII ARSENIAS.

Arseniate of Sodium.

$Na_2HAsO_4,12H_2O$; and $Na_2HAsO_4,7H_2O$.

Synonyms.—Sodæ Arsenias; Arseniate of Soda.

Take of

Arsenious Acid	10 ounces
Nitrate of Sodium	8½ ounces
Dried Carbonate of Sodium . . .	5½ ounces
Boiling Distilled Water	35 ounces

Reduce the dry ingredients separately to fine powder, and mix them thoroughly in a mortar. Put the mixture into a large clay crucible, and cover it with the lid. Expose the crucible to a full red heat, till all effervescence has ceased and complete fusion has taken place. Pour out the fused salt on a clean flagstone, and as soon as it has solidified, and while it is still warm, put it into the boiling water, stirring diligently. When the salt has dissolved, filter the solution through paper and set it aside to crystallise.

Drain the crystals, dry them rapidly by exposure on filtering paper, and enclose them in stoppered bottles.

Characters and Tests.—In colourless transparent prisms soluble in water; the solution is alkaline, giving white precipitates with chloride of barium, chloride of calcium, and sulphate of zinc, and a brick-red precipitate with nitrate of silver, all of which are soluble in nitric acid. When freshly crystallised, arseniate of sodium has the composition expressed by the formula $Na_2HAsO_4,12H_2O$; this salt loses 53·73 per cent. of its weight when dried at 300° F. (148°·9 C.), becoming anhydrous. On exposure of the ordinary salt, moisture escapes, the effloresced salt having the formula $Na_2HAsO_4,7H_2O$. The latter salt loses 40·38 per cent. of its weight when dried at 300° F. (148°·9 C.), becoming anhydrous. An aqueous solution of 12·4 grains of anhydrous arseniate of sodium, acidulated with acetic acid, requires not less than 34 grains of acetate of lead for complete precipitation.

Dose.—$\frac{1}{16}$ to $\frac{1}{8}$ grain.

Preparation.

Liquor Sodii Arseniatis {7·4 grains or / 4·5 grains dried} in 1 fluid ounce

SODII BICARBONAS.

Bicarbonate of Sodium.

Synonyms.—Sodæ Bicarbonas; Bicarbonate of Soda.

$NaHCO_3$.

A salt obtained by saturating carbonate of sodium with carbonic acid, or by reaction of chloride of sodium and bicarbonate of ammonium.

Characters and Tests.—In powder or small opaque irregular scales, white, of a saline not unpleasant taste. Imparts a yellow colour to flame. Dissolves with much effervescence in diluted hydrochloric acid, forming a solution in which perchloride of platinum causes no precipitate. A solution of the salt in cold water gives a white and not a coloured precipitate with solution of perchloride of mercury. When supersaturated with nitric acid its solution scarcely precipitates with chloride of barium or nitrate of silver. Eighty-four grains exposed to a red heat leaves fifty-three of an alkaline residue, which requires for neutralisation 1000 grain-measures of the volumetric solution of oxalic acid.

20 grains of Bicarbonate of Sodium } neutralise { 16·7 grains of Citric Acid, or / 17·8 grains Tartaric Acid

Dose.—10 to 60 grains.

Preparations containing Bicarbonate of Sodium.

Liquor Sodæ Effervescens . .	30 grains in 1 pint
Sodii Citro-tartras Effervescens .	17 parts in 31
Trochisci Sodii Bicarbonatis .	5 grains in each lozenge

SODII BROMIDUM.

Bromide of Sodium.

$NaBr$.

This salt may be obtained by the process described in connection with bromide of potassium, solution of soda being used in place of solution of potash, and crystallisation being conducted from warm solutions.

Characters and Tests.—A granular white powder consisting of small monoclinic crystals, somewhat deliquescent, inodorous, with a saline taste, readily soluble in less than twice its weight of water, much less soluble in spirit. It imparts an intense yellow colour to flame. When its aqueous solution is mixed with a little chlorine water, and shaken with chloroform, the latter, on falling to the bottom of the fluid, exhibits a red colour. Ten grains of the dry salt requires for complete decomposition about 960 grain-measures of the volumetric solution of nitrate of silver. A solution of the salt mixed with mucilage of starch and a drop of an aqueous solution of chlorine or of bromine does not exhibit any blue colour.

Dose.—10 to 30 grains.

SODII CARBONAS.

Carbonate of Sodium.

Synonyms.—Sodæ Carbonas; Carbonate of Soda.

$Na_2CO_3,10H_2O$.

.n to
This salt is commonly obtained from chl granular
sodium, either by reaction with bicar ate the granules
monium and subsequent ignition, or by preserve the pre-
sulphate and action of heat on a mixtu
with carbon and carbonate of calciur

Characters and Tests.—In transparent colourless laminar crystals of a rhombic shape, efflorescent, with a harsh alkaline taste and strong alkaline reaction. It imparts a yellow colour to flame, and dissolves with effervescence in diluted hydrochloric acid, forming a solution which does not precipitate with perchloride of platinum. By heat it undergoes aqueous fusion, and then dries up, losing sixty-three per cent. of its weight. When supersaturated with nitric acid it precipitates only slightly with chloride of barium or nitrate of silver. One hundred and forty-three grains requires for neutralisation at least 960 grain-measures of the volumetric solution of oxalic acid.

20 grains of Carbonate of Sodium	neutralise	9·8 grains Citric Acid, or 10½ grains Tartaric Acid

Dose.—5 to 30 grains.

Preparations for which Carbonate of Sodium is used.

Liquor Sodæ
,, ,, Chlorinatæ
Soda Tartarata
Sodii Arsenias
,, Bicarbonas
,, Carbonas Exsiccata
Sodii Phosphas

SODII CARBONAS EXSICCATA.

Dried Carbonate of Sodium.

Na_2CO_3.

Synonyms.—Sodæ Carbonas Exsiccata; Dried Carbonate of Soda.

Take of
Carbonate of Sodium . . . . 8 ounces

bonate xpose the carbonate of sodium in a porcelain capsule to
lied gently until the crystals crumble to powder; then
Dose.—10 [illegible] rature and continue the action until vapours
Preparations The product weighs about three ounces.
Liquor Sodæ Efferv powder, enclose it in a stoppered bottle.
Sodii Citro-tartras E ins.
Trochisci Sodii Bicarb

SODII CHLORIDUM.

Chloride of Sodium. Common Salt.

$NaCl$.

Characters and Tests.—In small white crystalline grains, or transparent cubic crystals, free from moisture, has a purely saline taste, imparts a yellow colour to flame, is soluble in water. The solution is not precipitated by perchloride of platinum, but gives with nitrate of silver a white precipitate soluble in ammonia, but insoluble in nitric acid.

Preparations for which Chloride of Sodium is used.

Acidum Hydrochloricum | Hydrargyri Perchloridum
Hydrargyri Subchloridum

SODII CITRO-TARTRAS EFFERVESCENS.

Effervescent Citro-tartrate of Sodium.

Synonyms.—Sodæ Citro-tartras Effervescens; Effervescent Citro-tartrate of Soda.

Take of

Bicarbonate of Sodium, in powder	17 ounces	or	17 parts
Tartaric Acid, in powder . .	9 ounces	,,	9 parts
Citric Acid, in powder . . .	6 ounces	,,	6 parts
Refined Sugar, in powder . .	5 ounces	,,	5 parts

Mix the powders thoroughly, place them in a dish or pan of suitable form heated to between 200° and 220° F. (93°·3 and 104°·4 C.), and when the particles of the powder begin to aggregate, stir them assiduously until they assume a granular form; then, by means of suitable sieves, separate the granules of uniform and most convenient size, and preserve the preparation in well-closed bottles.

Dose.—60 grains to ¼ ounce.

SODII HYPOPHOSPHIS.

Hypophosphite of Sodium.

Synonyms.—Sodæ Hypophosphis; Hypophosphite of Soda.

$NaPH_2O_2$.

Obtained by adding carbonate of sodium to solution of hypophosphite of calcium as long as a precipitate of carbonate of calcium is formed, then filtering the solution and evaporating it to dryness by the heat of a steam-bath, keeping it constantly stirred when the salt begins to solidify.

Characters and Tests.—A white granular salt, having a bitter nauseous taste. It is deliquescent, very soluble in water and in spirit, but insoluble in ether. At a red heat it ignites, emitting spontaneously inflammable phosphuretted hydrogen. It is rapidly attacked by oxidising agents. Its solution yields with nitrate of silver a white precipitate which rapidly darkens in colour. Its solution does not effervesce with acids, does not give a precipitate with acetate of lead, nor more than a slight cloudiness with oxalate of ammonium. Five grains dissolved in half an ounce of distilled water, and the solution boiled for ten minutes with eleven and a half grains of permanganate of potassium and filtered, should afford a nearly colourless solution.

Dose.—5 to 10 grains.

SODII IODIDUM.

Iodide of Sodium.

NaI.

This salt may be obtained by the process described in connection with iodide of potassium, solution of soda being used in place of solution of potash.

Characters and Tests.—A dry white crystalline deliquescent powder having a saline and somewhat bitter taste. It is readily soluble in water and in spirit. The aqueous solution is neutral to litmus, and when mixed with mucilage of starch yields a blue colour on the addition of a little chlorine water. It imparts an intense yellow colour to flame. The addition of tartaric acid and mucilage of starch to its aqueous solution does not develope a blue colour. Solution of nitrate of silver added in excess affords a yellowish-white precipitate which when shaken with diluted solution of ammonia yields by subsidence a clear liquid in which excess of nitric acid causes very little turbidity. Its aqueous solution is only faintly precipitated by the addition of saccharated solution of lime. Ten grains requires for complete precipitation about 660 grain-measures of the volumetric solution of nitrate of silver.

Dose.—3 to 10 grains.

SODII NITRAS.

Nitrate of Sodium.

Synonyms.—Sodæ Nitras; Nitrate of Soda.

$NaNO_3$.

A native salt, purified by crystallisation from water.

Characters and Tests.—In colourless obtuse rhombohedral crystals, having a cooling saline taste. Thrown on the fire it deflagrates; warmed in a test-tube with sulphuric acid and copper wire, it evolves ruddy fumes. It is soluble in about two parts of cold distilled water. The solution gives only a faint precipitate with nitrate of silver or chloride of barium.

Preparation for which Nitrate of Sodium is used.

Sodii Arsenias

SODII PHOSPHAS.

Phosphate of Sodium.

Synonyms.—Sodæ Phosphas; Phosphate of Soda.

$Na_2HPO_4,12H_2O$.

This salt may be obtained by adding a solution of carbonate of sodium to a solution of acid phosphate of calcium prepared from a mixture of bone-ash and sulphuric acid.

Characters and Tests.—In transparent colourless rhombic prisms, terminated by four converging planes, efflorescent, tasting like common salt. It imparts a yellow colour to flame. Its solution has a faintly alkaline reaction, it gives a yellow precipitate with nitrate of silver, the resulting fluid acquiring an acid reaction. Heated to dull redness it loses sixty-three per cent. of its weight, leaving a residue, which, when dissolved in water, gives with chloride of barium a precipitate almost entirely soluble in diluted nitric acid.

Dose.—¼ to 1 ounce.

Preparations for which Phosphate of Sodium is used.

Ferri Phosphas	Syrupus Ferri Phosphatis

SODII SALICYLAS.

Salicylate of Sodium.

Synonyms.—Sodæ Salicylas; Salicylate of Soda.

$(NaC_7H_5O_3)_2,H_2O$.

Obtained by the action of salicylic acid on carbonate of sodium or on caustic soda.

Characters and Tests.—Small colourless, or nearly colourless, crystalline scales, inodorous, and having a sweetish saline taste. Slightly but completely soluble in alcohol, readily soluble in water. The solutions are neutral or faintly acid to litmus. When ignited, the salt evolves inflammable vapours, and a white residue remains which effervesces with acids and imparts an intense yellow colour to flame. Perchloride of iron colours a concentrated solution reddish-brown, and a dilute solution violet. If the aqueous solution be acidulated by nitric acid and the precipitate be dissolved by rectified spirit, the mixture is not rendered more than faintly opalescent by chloride of barium or nitrate of silver. It dissolves without coloration or effervescence in cold sulphuric acid.

Dose.—10 to 30 grains.

SODII SULPHAS.

Sulphate of Sodium.

Synonyms.—Sodæ Sulphas; Sulphate of Soda; Glauber's Salt.

$Na_2SO_4,10H_2O$.

May be obtained from the residue left in the manufacture of hydrochloric acid from chloride of sodium, by neutralising it with carbonate of sodium, and crystallising from solution in water.

Characters and Tests.—In transparent oblique prisms; has a salt and bitter taste; effloresces on exposure to the air; is soluble in water, insoluble in spirit. Exposed to heat in a porcelain crucible it loses 55·9 per cent. of water. Heated with solution of potash no odour of ammonia is evolved, and no precipitate is formed. Imparts a yellow colour to flame. One hundred grains of it dissolved in distilled water and acidulated with hydrochloric acid, gives, by the addition of chloride of barium, a white precipitate, which, when it has been washed and dried, weighs 72·2 grains.

Dose.—¼ to 1 ounce.

SODII SULPHIS.

Sulphite of Sodium.

Synonyms.—Sodæ Sulphis; Sulphite of Soda.

$Na_2SO_3,7H_2O$.

Obtained by the action of sulphurous acid on carbonate of sodium or on caustic soda.

Characters and Tests.—Colourless transparent monoclinic prisms, efflorescent in dry air, inodorous, with a cooling saline and sulphurous taste. It is readily soluble in water, very soluble in spirit. The aqueous solution has a neutral or faintly alkaline reaction, imparts an intense yellow colour to flame, and if treated with hydrochloric acid evolves a sulphurous vapour, but does not become cloudy.

Dose.—5 to 20 grains.

SODII SULPHOCARBOLAS.

Sulphocarbolate of Sodium.

Synonyms.—Sodæ Sulphocarbolas; Sulphocarbolate of Soda.

$NaC_6H_5SO_4,2H_2O.$

Obtained by dissolving carbolic acid in excess of sulphuric acid, supersaturating the liquid with carbonate of barium, filtering, and treating the filtrate with carbonate of sodium until no further precipitate forms. The filtrate from this mixture yields crystals of sulphocarbolate of sodium on evaporation.

Characters and Tests.—Colourless transparent rhombic prisms, inodorous or nearly so, with a cooling saline and somewhat bitter taste. Readily soluble in water, less so in spirit, the solutions being neutral to litmus. On ignition it gives vapours of carbolic acid and leaves a residue the solution of which in water affords a white precipitate with chloride of barium insoluble in hydrochloric acid. It imparts an intense yellow colour to flame. The dilute aqueous solution is rendered violet by solution of perchloride of iron; it should not at once be rendered turbid by chloride of barium.

Dose.—10 to 15 grains.

SODII VALERIANAS.

Valerianate of Sodium.

$NaC_5H_9O_2$.

Take of

Amylic Alcohol	4 fluid ounces
Bichromate of Potassium	9 ounces
Sulphuric Acid	6½ fluid ounces
Solution of Soda	a sufficiency
Water	½ gallon

Dilute the sulphuric acid with ten fluid ounces of the water, and dissolve the bichromate of potassium in the remainder of the water with the aid of heat. When both liquids are cold, mix them with the amylic alcohol in a retort or flask, with occasional brisk agitation, until the temperature of the mixture has fallen to about 90° F. (32°·2 C.) Connect with a condenser, and distil until about half a gallon of liquid has passed over. Saturate the distilled liquid accurately with the solution of soda, remove any oily fluid which floats on the surface, evaporate till watery vapour ceases to escape, and then raise the heat cautiously so as to liquefy the salt. When the product has cooled and solidified, break it into pieces, and immediately put it into a stoppered bottle.

Characters.—In dry white masses without alkaline reaction, entirely soluble in rectified spirit, and giving out a powerful odour of valerian on the addition of diluted sulphuric acid.

Dose.—1 to 5 grains.

Preparation for which Valerianate of Sodium is used.

Zinci Valerianas

SODIUM.

Sodium.

The metallic element sodium as met with in commerce. It should be preserved in well-stoppered bottles under mineral naphtha.

Characters and Tests.—A soft metal, rapidly oxidising in the air, but showing a bright metallic surface when freshly cut. It attacks water or alcohol with evolution of hydrogen gas, little or no insoluble matter remaining. Twenty-three grains, cautiously dissolved in water, requires for neutralisation at least 975 grain-measures of the volumetric solution of oxalic acid.

Preparation.—Liquor Sodii Ethylatis.

Preparations containing Sodium or its Compounds.

Borax
Cataplasma Sodæ Chlorinatæ
Emplastrum Belladonnæ
,, Calefaciens
,, Opii
,, Resinæ
,, Saponis
,, ,, Fuscum
Extractum Colocynthidis Compositum
Fel Bovinum Purificatum
Linimentum Opii
,, Potassii Iodidi cum Sapone
Saponis
Liquor Sodæ
,, ,, Chlorinatæ
,, ,, Effervescens
,, Sodii Arseniatis
,, ,, Ethylatis
Pilula Aloes Barbadensis
,, ,, et Asafœtidæ
,, Aloes Socotrinæ
,, Cambogiæ Composita
Pilula Rhei Composita
,, Saponis Composita
,, Scillæ Composita
Sapo Animalis
,, Durus
Soda Caustica
,, Tartarata
Sodii Arsenias
,, Bicarbonas
,, Bromidum
,, Carbonas
,, ,, Exsiccata
,, Chloridum
,, Citro-tartras Effervescens
,, Hypophosphis
,, Iodidum
,, Nitras
,, Phosphas
,, Salicylas
,, Sulphas
,, Sulphis
,, Sulphocarbolas
,, Valerianas
Trochisci Sodii Bicarbonatis

SPIRITUS ÆTHERIS.

Spirit of Ether.

Ether	10 fluid ounces
Rectified Spirit	1 pint

Mix.

Test.—Specific gravity 0·809.

Dose.—30 to 90 minims.

Preparation.—Tinctura Lobeliæ Ætherea.

SPIRITUS ÆTHERIS COMPOSITUS.

Compound Spirit of Ether.

Synonym.—Hoffmann's Anodyne.

Gradually mix thirty-six fluid ounces of sulphuric acid with forty fluid ounces of rectified spirit, and let the mixture stand for twenty-four hours. Then distil until the fluid in the retort begins to blacken. Shake the distillate with lime-water to neutralise any acid, and remove the supernatant liquor and expose it to the air for about twelve hours. Pour three fluid drachms of the resulting liquid into a mixture of eight fluid ounces of ether and sixteen fluid ounces of rectified spirit.

Dose.—30 minims to 2 fluid drachms.

SPIRITUS ÆTHERIS NITROSI.

Spirit of Nitrous Ether.

Synonym.—Spiritus Ætheris Nitrici.

A spirituous solution containing nitrous compounds, aldehyd, and other substances. It may be obtained as follows :—

Take of

Nitric Acid	3 fluid ounces
Sulphuric Acid	2 fluid ounces
Copper, in fine wire (about No. 25)	2 ounces
Rectified Spirit	a sufficiency

To one pint of the spirit add gradually the sulphuric acid, stirring them together; then add, in the same way, two and a half fluid ounces of the nitric acid. Put the mixture into a retort or flask, into which the copper has been introduced, and to which a thermometer is fitted. Attach now an efficient condenser, and applying heat gently, let the spirit distil at a temperature commencing at 170° F. (76°·7 C.) and rising to 175° F. (79°·4 C.), but not exceeding 180° F. (82°·2 C.), until twelve fluid ounces have passed over and been collected in a bottle, the latter and the condenser being kept cool with ice-cold water; then withdraw the heat, and having allowed the contents of the retort to cool, introduce the remaining half-ounce of nitric acid, and resume the distillation as before, until the distilled product has been increased to fourteen fluid ounces. Mix this with two pints of the rectified spirit or as much as will make the product correspond to the nitric oxide test alluded to in the following paragraph. Preserve the product in thoroughly well-closed vessels.

Characters and Tests.—Transparent and nearly colourless, with a very slight tinge of yellow, mobile, inflammable, of a peculiar penetrating apple-like odour, and sweetish cooling sharp taste. Specific gravity 0·840 to 0·845. It does not effervesce, or only feebly, when shaken with a little bicarbonate of sodium. When agitated in a test-tube with a strong solution of sulphate of iron, if a few drops of strong sulphuric acid are then poured down the side of the tube, a deep olive-brown or black zone is produced, widening as the tube is gently shaken. Tested as described in the 'Pharmaceutical Journal,' 3rd series, vol. xiii. page 63; or vol. xv. p. 101; or vol. xv. p. 673, it should yield, at the ordinary temperature (60° F., 15°·5 C.) and pressure (30 inches or 760 millimetres of mercury), and when freshly prepared, seven times its volume of nitric oxide gas; and even after it has been kept some time and the vessel containing it has occasionally been opened, it should yield not much less than five times its volume of the gas.

Dose.—½ to 2 fluid drachms.

SPIRITUS AMMONIÆ AROMATICUS.

Aromatic Spirit of Ammonia.

Synonyms.—**Spiritus Ammoniæ Compositus; Sal Volatile.**

Take of

Carbonate of Ammonium	4 ounces
Strong Solution of Ammonia	8 fluid ounces
Volatile Oil of Nutmeg	4½ fluid drachms
Oil of Lemon	6½ fluid drachms
Rectified Spirit	6 pints
Water	3 pints

Place the oils of lemon and nutmeg and rectified spirit with the water in a retort; distil seven pints, and then distil and separately collect an additional nine fluid ounces. Place the nine ounces of distillate, together with the carbonate of ammonium and the strong solution of ammonia, in a bottle holding rather more than a pint. Securely cork the bottle and gently warm it in a water-bath to 140° F. (60° C.), shaking from time to time until all the salt has dissolved. Filter if necessary, when cold, through a little cotton wool, and gradually mix it with the seven pints of distilled spirit. The product should measure one gallon.

Tests.—Specific gravity 0·886. One fluid ounce requires for neutralisation 558 grain-measures of the volumetric solution of oxalic acid. One fluid ounce, after the addition of 330 grain-measures of the test solution of chloride of barium, should yield, after filtration, a further precipitate when more of the reagent is added.

Dose.—½ to 1 fluid drachm.

Preparations.

Tinctura Guaiaci Ammoniata
,, Valerianæ Ammoniata

SPIRITUS AMMONIÆ FŒTIDUS.

Fetid Spirit of Ammonia.

Take of

Asafœtida	1½ ounce
Strong Solution of Ammonia	2 fluid ounces
Rectified Spirit	a sufficiency

Break the asafœtida into small pieces, and macerate it, in a closed vessel, in fifteen fluid ounces of the spirit for twenty-four hours, then distil off the spirit, mix the product with the solution of ammonia, and add sufficient rectified spirit to make one pint.

Test.—Specific gravity about 0·847.

Dose.—½ to 1 fluid drachm.

SPIRITUS ARMORACIÆ COMPOSITUS.

Compound Spirit of Horseradish.

Take of

Horseradish Root, scraped Bitter-Orange Peel, cut small and bruised	of each	20 ounces
Nutmeg, bruised		½ ounce
Proof Spirit		1 gallon
Water		3 pints

Mix, and distil a gallon.

Test.—Specific gravity about 0·920.

Dose.—1 to 2 fluid drachms.

SPIRITUS CAJUPUTI.

Spirit of Cajuput.

Take of

Oil of Cajuput	1 fluid ounce
Rectified Spirit	49 fluid ounces

Dissolve.

Dose.—½ to 1 fluid drachm.

SPIRITUS CAMPHORÆ.

Spirit of Camphor.

Take of

Camphor	1 ounce
Rectified Spirit	9 fluid ounces

Dissolve.

Test.—Specific gravity about 0·850.

Dose.—10 to 30 minims.

SPIRITUS CHLOROFORMI.

Spirit of Chloroform.

Synonyms.—Chloric Ether; Spirit of Chloric Ether.

Take of

Chloroform	1 fluid ounce
Rectified Spirit	19 fluid ounces

Dissolve.

Test.—Specific gravity 0·871.

Dose.—20 to 60 minims.

SPIRITUS CINNAMOMI.

Spirit of Cinnamon.

Take of

Oil of Cinnamon	1 fluid ounce
Rectified Spirit	49 fluid ounces

Dissolve.

Dose.—½ to 1 fluid drachm.

Preparation.—Acidum Sulphuricum Aromaticum.

SPIRITUS JUNIPERI.

Spirit of Juniper.

Take of

Oil of Juniper	1 fluid ounce
Rectified Spirit	49 fluid ounces

Dissolve.

Dose.—½ to 1 fluid drachm.

Preparation.—Mistura Creasoti.

SPIRITUS LAVANDULÆ.

Spirit of Lavender.

Take of

Oil of Lavender	1 fluid ounce
Rectified Spirit	49 fluid ounces

Dissolve.

Dose —½ to 1 fluid drachm.

SPIRITUS MENTHÆ PIPERITÆ.

Spirit of Peppermint.

Take of

Oil of Peppermint. . . .	1 fluid ounce
Rectified Spirit	49 fluid ounces

Dissolve.

Dose.—½ to 1 fluid drachm.

SPIRITUS MYRISTICÆ.

Spirit of Nutmeg.

Take of

Volatile Oil of Nutmeg . . .	1 fluid ounce
Rectified Spirit	49 fluid ounces

Dissolve.

Dose.—½ to 1 fluid drachm.

Preparation.—Mistura Ferri Composita.

SPIRITUS RECTIFICATUS.

Rectified Spirit.

Alcohol, C_2H_5HO, with sixteen per cent. of water; obtained by the distillation of fermented saccharine fluids.

Characters and Tests.—Colourless, transparent, very mobile and inflammable, of a characteristic pleasant odour, and a strong spirituous burning taste. Burns with a blue flame without smoke. Specific gravity 0·838. Remains clear when diluted with distilled water. A little rubbed on the back of the hand leaves no unpleasant smell after the spirit has evaporated. Four fluid ounces with thirty grain-measures of the volumetric solution of nitrate of silver exposed for twenty-four hours to bright light, and then decanted from the black powder which has formed, undergoes no further change when again exposed to light with more of the test.

Tinctures made with Rectified Spirit.

Tinctura Aconiti
,, Arnicæ
,, Asafœtidæ
,, Aurantii Recentis
,, Benzoini Composita
,, Cannabis Indicæ
,, Capsici
,, Cinnamomi
,, Cubebæ
,, Iodi
,, Laricis
Tinctura Lavandulæ Composita
,, Myrrhæ
,, Opii Ammonia
,, Podophylli
,, Pyrethri
,, Sumbul
,, Tolutana
,, Veratri Viridis
,, Zingiberis
,, ,, Fortior

SPIRITUS ROSMARINI.

Spirit of Rosemary.

Take of

Oil of Rosemary	1 fluid ounce
Rectified Spirit	49 fluid ounces

Dissolve.

Dose.—½ to 1 fluid drachm.

SPIRITUS TENUIOR.

Proof Spirit.

Take of

Rectified Spirit	5 pints
Distilled Water	3 pints

Mix.

Test.—Specific gravity 0·920. It contains, by weight, about 49 per cent., and, by volume, about 57 per cent., of absolute alcohol.

Tinctures made with Proof Spirit.

Tinctura Aloes
,, Aurantii
,, Belladonnæ
,, Buchu
,, Calumbæ
,, Camphoræ Composita
,, Cantharidis
,, Cardamomi Composita
,, Cascarillæ
,, Catechu
,, Chiratæ
,, Cimicifugæ
,, Cinchonæ
,, ,, Composita
,, Cocci
,, Colchici Seminum
,, Conii
,, Croci
,, Digitalis
,, Ergotæ

Tinctura Gallæ
,, Gelsemii
,, Gentianæ Composita
,, Hyoscyami
,, Jaborandi
,, Jalapæ
,, Krameriæ
,, Limonis
,, Lobeliæ
,, Lupuli
,, Opii
,, Quassiæ
,, Quininæ
,, ,, Ammoniata
,, Rhei
,, Sabinæ
,, Scillæ
,, Senegæ
,, Sennæ
,, Serpentariæ
,, Stramonii
,, Valerianæ

SPIRITUS VINI GALLICI.

French Brandy.

Spirit distilled from French wine. It has a characteristic flavour, and a light sherry colour derived from the cask in which it has been kept.

Preparation.—Mistura Spiritus Vini Gallici.

STAPHISAGRIÆ SEMINA.

Stavesacre Seeds.

The dried ripe seeds of Delphinium Staphisagria, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. i. plate 4.

Characters.—Irregularly triangular or obscurely quadrangular, arched, blackish-brown when fresh, but becoming dull greyish-brown by keeping. Testa wrinkled and deeply pitted; nucleus soft, whitish, oily. No marked odour; taste nauseously bitter and acrid.

Preparation.—Unguentum Staphisagriæ.

STRAMONII SEMINA.

Stramonium Seeds.

The dried ripe seeds of Datura Stramonium, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iii. plate 192.

Characters.—About one-sixth of an inch long, reniform, flattened, brownish-black, finely pitted, wrinkled. Odour disagreeable when bruised; taste bitterish.

Preparations.

Extractum Stramonii	
Tinctura Stramonii .	54½ grains to 1 fluid ounce

STRYCHNINA.

Strychnine.

Synonym.—**Strychnia.**

$C_{21}H_{22}N_2O_2$.

An alkaloid prepared from Nux Vomica. It may be obtained by the following process:—

Take of

Nux Vomica	1 pound
Acetate of Lead	180 grains
Solution of Ammonia	a sufficiency
Rectified Spirit	a sufficiency
Distilled Water	a sufficiency

Heat the previously split seeds to a temperature of 212° F. (100° C.) for three hours, and then reduce them to a fine powder. Digest the powder for twelve hours with two pints of the spirit and one of the water, gently heating; strain through linen, express strongly and repeat the process twice. Distil off the spirit from the mixed fluid, evaporate the watery residue to about sixteen ounces, and filter when cold. Add now the acetate of lead, previously dissolved in distilled water, so long as it occasions any precipitate; filter; wash the precipitate with ten ounces of cold water, adding the washings to the filtrate; evaporate the clear fluid to eight ounces, and when it has cooled add the ammonia in slight excess, stirring thoroughly. Let the mixture stand at the ordinary temperature for twelve hours; collect the precipitate on a filter, wash it once with a few ounces of cold distilled water, dry it in a water-bath or hot-air chamber, and boil it with successive portions of rectified spirit, till the fluid scarcely tastes bitter. Distil off most of the spirit, evaporate the residue to the bulk of about half an ounce, and set it aside to cool. Cautiously pour off the yellowish mother liquor (which contains the brucine of the seeds) from the white crust of strychnine which adheres to the vessel. Throw the crust on a paper filter, wash it with a mixture of two parts of rectified spirit and one of water, till the washings cease to become red on the addition of nitric acid; finally, dissolve it by boiling with an ounce of rectified spirit, and set it aside to crystallise. More crystals may be obtained by evaporating the mother liquor.

Characters and Tests.—In right square octahedrons or prisms colourless and inodorous; sparingly soluble in water, but communicating to it an intensely bitter taste; soluble in boiling rectified spirit, and in chloroform, but not in absolute alcohol or in ether. Pure sulphuric acid forms with it a colourless solution, which on the addition of bichromate of potassium acquires an intensely violet hue, speedily passing through red to yellow. Not coloured by nitric acid; leaves no ash when burned with free access of air. A very active poison.

Dose.—$\frac{1}{30}$ to $\frac{1}{12}$ grain.

Preparation.

Liquor Strychninæ Hydrochloratis, 1 grain in 100 fluid grains

STYRAX PRÆPARATUS.

Prepared Storax.

A balsam prepared from the inner bark of Liquidambar orientalis, *Miller*; *Hook. Icon. Plant.* 3rd ser. plate 1019. Purified by solution in spirit, filtration, and evaporation.

Characters and Tests.—A semi-transparent brownish-yellow semi-fluid balsam about the consistence of thick honey, with a strong agreeable odour and balsamic taste. Heated in a test-tube on the vapour-bath, it becomes more liquid, but gives off no moisture; boiled with solution of bichromate of potassium and sulphuric acid, it evolves an odour resembling that of essential oil of bitter almonds.

Preparation.

Tinctura Benzoini Composita . 33 grains to 1 fluid ounce

SUCCUS BELLADONNÆ.

Juice of Belladonna.

Take of

Fresh leaves and young branches of Belladonna	7 pounds
Rectified Spirit	a sufficiency

Bruise the belladonna in a stone mortar, press out the juice, and to every three measures of juice add one of the spirit. Set aside for seven days, and filter. Keep it in a cool place.

Dose.—5 to 15 minims.

SUCCUS CONII.

Juice of Hemlock.

Take of

Fresh leaves and young branches of Hemlock	7 pounds
Rectified Spirit	a sufficiency

Bruise the hemlock in a stone mortar, press out the juice, and to every three measures of juice add one of the spirit. Set aside for seven days, and filter. Keep it in a cool place.

Dose.—½ to 1 fluid drachm.

Preparations.

Cataplasma Conii | Vapor Coninæ

SUCCUS HYOSCYAMI.

Juice of Henbane.

Take of

Fresh leaves, flowering tops, and young branches of Henbane . . .	7 pounds
Rectified Spirit	a sufficiency

Bruise the henbane in a stone mortar, press out the juice, and to every three measures of juice add one of the spirit. Set aside for seven days, and filter. Keep it in a cool place.

Dose.—½ fluid drachm to 1 fluid drachm.

SUCCUS SCOPARII.

Juice of Broom.

Take of

Fresh Broom Tops	7 pounds
Rectified Spirit	a sufficiency

Bruise the broom tops in a stone mortar, press out the juice, and to every three measures of juice add one of the spirit. Set aside for seven days, and filter. Keep it in a cool place.

Dose.—1 to 2 fluid drachms.

SUCCUS TARAXACI.

Juice of Dandelion.

Take of

Fresh Dandelion Root . . .	7 pounds
Rectified Spirit	a sufficiency

Bruise the dandelion root in a stone mortar, press out the juice, and to every three measures of juice add one of the spirit. Set aside for seven days, and filter. Keep it in a cool place.

Dose.—1 to 2 fluid drachms.

SULPHUR PRÆCIPITATUM.

Precipitated Sulphur.

Take of

Sublimed Sulphur . . .	5 ounces
Slaked Lime	3 ounces
Hydrochloric Acid . . .	8 fluid ounces, or a sufficiency
Distilled Water	a sufficiency

Heat the sulphur and lime, previously well mixed, in a pint of the water, stirring diligently with a wooden spatula; boil for fifteen minutes, and filter. Boil the residue again in half a pint of the water, and filter. Let the united filtrates cool, dilute with two pints of the water, and, in an open place or under a chimney, add in successive quantities the hydrochloric acid previously diluted with a pint of the water, until effervescence ceases and the mixture acquires a slight acid reaction. Allow the precipitate to settle, decant the supernatant liquid, pour on fresh distilled water, and continue the purification by affusion of distilled water and subsidence, until the fluid ceases to have an acid reaction and to precipitate with oxalate of ammonium. Collect the precipitated sulphur on a calico filter, wash it once with distilled water, and dry it at a temperature not exceeding 120° F. (48°·9 C.)

Characters and Tests.—A greyish-yellow soft powder free from grittiness and from the smell of sulphuretted hydrogen. When heated in an open vessel, it burns with a blue flame and the evolution of sulphurous acid gas. Entirely volatilised by heat. Under the microscope it is seen to consist of opaque globules without any admixture of crystalline matter. Otherwise it corresponds with sublimed sulphur.

Dose.—20 to 60 grains.

SULPHUR SUBLIMATUM.

Sublimed Sulphur.

Sulphur, prepared from crude or rough sulphur by sublimation.

Characters and Tests.—A slightly gritty powder of a fine greenish-yellow colour, without taste and without odour, unless heated; burning in open vessels with a blue flame and the evolution of sulphurous acid gas. Entirely volatilised by heat; does not redden moistened litmus paper. Solution of ammonia, agitated with it, and filtered, does not on evaporation leave any residue.

Dose.—20 to 60 grains.

Preparations containing Sulphur.

Confectio Sulphuris	4 parts in 10, nearly
Emplastrum Ammoniaci cum Hydrargyro	
„ Hydrargyri	
Pulvis Glycyrrhizæ Compositus . .	1 part in 12
Unguentum Sulphuris . . .	1 part in 5

Preparations for which Sublimed Sulphur is used.

Antimonium Sulphuratum	Sulphuris Iodidum
Potassa Sulphurata	Sulphur Sublimatum

SULPHURIS IODIDUM.

Iodide of Sulphur.

Take of

Iodine	4 ounces
Sublimed Sulphur	1 ounce

Rub them together in a glass or earthenware mortar until they are thoroughly mixed. Put the mixture into a flask, close the orifice loosely, and apply heat gently so that the colour of the mass shall become gradually darkened. When the colour has become uniformly dark throughout, increase the heat so as to produce liquefaction. Then incline the flask in different directions, in order to return into the liquid any portion of the iodine which may have been condensed on the inner surface of the vessel. Lastly, withdraw the heat, and when the liquid has congealed, remove the mass by breaking the flask, reduce it to pieces, and keep these in a well-stoppered bottle.

Characters and Tests.—A greyish-black solid substance, with a radiated crystalline appearance. It resembles iodine in smell, and in the property of staining the cuticle when applied to it. Soluble in about sixty parts of glycerine; insoluble in cold water. If 100 grains be thoroughly boiled with water, the iodine will pass off in vapour, and about twenty grains of sulphur will remain.

Preparation.

Unguentum Sulphuris Iodidi .	30 grains to 1 ounce

SUMBUL RADIX.

Sumbul Root.

The dried transverse sections of the root of Ferula Sumbul, *Hook. fil.* (Euryangium Sumbul, *Kauffmann*); *Bentl. and Trim. Med. Pl.* vol. ii. plate 129.

Characters.—Varying much in size, but usually from about one inch to three inches in diameter, and from three-quarters of an inch to more than an inch in thickness. The pieces are covered on the outer surface with a dusky-brown papery transversely wrinkled bark, and are sometimes beset with short bristly fibres; internally they are spongy, coarsely fibrous, dry, farinaceous, and dirty yellowish-brown, mottled with whitish patches and spots of exuded resin. Odour strong, musk-like; taste bitter, aromatic.

Preparation.

Tinctura Sumbul . .	54½ grains to 1 fluid ounce

SUPPOSITORIA ACIDI CARBOLICI CUM SAPONE.

Carbolic Acid Suppositories.

Take of

Carbolic Acid	12 grains
Curd Soap, in powder . . .	180 grains
Glycerine of Starch . . .	40 grains, or a sufficiency

Mix the ingredients so as to form a paste of suitable consistence. Divide the mass into twelve equal parts, each of which is to be made into a conical or other convenient form for a suppository.

Each suppository contains one grain of carbolic acid.

SUPPOSITORIA ACIDI TANNICI.

Tannic Acid Suppositories.

Take of

Tannic Acid	36 grains
Oil of Theobroma	144 grains

Rub the tannic acid with forty-four grains of the oil of theobroma in a slightly warmed mortar, and add them to the remainder of the oil of theobroma previously melted at a low temperature; mix the whole thoroughly, and pour the mixture while it is fluid into suitable moulds of the capacity of fifteen grains; or the fluid mixture may be allowed to cool, and then be divided into twelve equal parts, each of which shall be made into a conical or other convenient form for a suppository.

Each suppository contains three grains of tannic acid.

SUPPOSITORIA ACIDI TANNICI CUM SAPONE.

Tannic Acid Suppositories with Soap.

Take of

Tannic Acid	36 grains
Glycerine of Starch	30 grains
Curd Soap, in powder	100 grains
Starch, in powder	a sufficiency

Mix the tannic acid with the glycerine of starch and soap, and add sufficient starch to form a paste of suitable consistence. Divide the mass into twelve equal parts, each of which is to be made into a conical or other convenient form for a suppository.

Each suppository contains three grains of tannic acid.

SUPPOSITORIA HYDRARGYRI.

Mercurial Suppositories.

Take of

Ointment of Mercury	60 grains
Oil of Theobroma	120 grains

Melt the oil of theobroma with sufficient heat, then add the ointment of mercury, and having mixed them thoroughly, without applying more heat, immediately pour the mixture, before it has congealed, into suitable moulds of the capacity of fifteen grains; or the fluid mixture may be allowed to cool, and then be divided into twelve equal parts, each of which shall be made into a conical or other convenient form for a suppository.

Each suppository contains five grains of ointment of mercury.

SUPPOSITORIA IODOFORMI.

Iodoform Suppositories.

Take of

Iodoform, in powder	36 grains
Oil of Theobroma	144 grains

Rub the iodoform with forty-four grains of the oil of theobroma in a slightly warmed mortar, and add this to the remainder of the oil of theobroma previously melted at a low temperature; mix the whole thoroughly, and pour the mixture while it is fluid into suitable moulds of the capacity of fifteen grains; or the fluid mixture may be allowed to cool, and then be divided into twelve equal parts, each of which shall be made into a conical or other convenient form for a suppository.

Each suppository contains three grains of iodoform.

SUPPOSITORIA MORPHINÆ.

Morphine Suppositories.

Take of

Hydrochlorate of Morphine	6 grains
Oil of Theobroma	174 grains

Rub the hydrochlorate of morphine with twenty-four grains of the oil of theobroma in a slightly warmed mortar, and add this to the remainder of the oil of theobroma previously melted at a low temperature; mix the whole thoroughly, and pour the mixture while it is fluid into suitable moulds of the capacity of fifteen grains; or the fluid mixture may be allowed to cool, and then be divided into twelve equal parts, each of which shall be made into a conical or other convenient form for a suppository.

Each suppository contains half a grain of hydrochlorate of morphine.

SUPPOSITORIA MORPHINÆ CUM SAPONE.

Morphine Suppositories with Soap.

Take of

Hydrochlorate of Morphine	6 grains
Glycerine of Starch	30 grains
Curd Soap, in powder	100 grains
Starch, in powder	a sufficiency

Mix the hydrochlorate of morphine with the glycerine of starch and soap, and add sufficient starch to form a paste of suitable consistence. Divide the mass into twelve equal parts, each of which is to be made into a conical or other convenient form for a suppository.

Each suppository contains half a grain of hydrochlorate of morphine.

SUPPOSITORIA PLUMBI COMPOSITA.

Compound Lead Suppositories.

Take of

Acetate of Lead	36 grains
Opium, in powder	12 grains
Oil of Theobroma	132 grains

Rub the acetate of lead and opium with forty-two grains of the oil of theobroma in a slightly warmed mortar, and add them to the remainder of the oil of theobroma previously melted at a low temperature; mix the whole thoroughly, and pour the mixture while it is fluid into suitable moulds of the capacity of fifteen grains; or the fluid mixture may be allowed to cool, and then be divided into twelve equal parts, each of which shall be made into a conical or other convenient form for a suppository.

Each suppository contains three grains of acetate of lead and one grain of opium.

SYRUPUS.

Syrup.

Take of

Refined Sugar	5 pounds
Distilled Water	2 pints

Dissolve the sugar in the water with the aid of heat; and add, after cooling, as much distilled water as may be necessary to make the weight of the product seven pounds and a half. The specific gravity should be 1·330.

Preparations.

Confectio Opii
Scammonii
Mistura Cretæ
,, Creasoti
Pilula Cambogiæ Composita
Syrupus Aurantii
,, Chloral
,, Zingiberis
Tinctura Chloroformi et Morphinæ

SYRUPUS AURANTII.

Syrup of Orange Peel.

Take of

Tincture of Orange Peel . . .	1 fluid ounce
Syrup	7 fluid ounces

Mix. The specific gravity should be about 1·282.

Dose.—1 fluid drachm.

Preparation.—Confectio Sulphuris.

SYRUPUS AURANTII FLORIS.

Syrup of Orange Flower.

Take of

Orange-flower Water . . .	8 fluid ounces
Refined Sugar	3 pounds
Distilled Water	16 fluid ounces, or a sufficiency

Dissolve the sugar in the distilled water by means of heat; strain, and when nearly cold add the orange-flower water, with a sufficient quantity of distilled water, if necessary, to make the product four pounds and a half. The specific gravity should be about 1·330.

Dose.—1 fluid drachm.

SYRUPUS CHLORAL.

Syrup of Chloral.

Take of

Hydrate of Chloral	80 grains
Distilled Water	$1\frac{1}{2}$ fluid drachm
Simple Syrup	a sufficiency

Dissolve the hydrate of chloral in the water, and add the syrup until the mixed product measures a fluid ounce. The specific gravity should be about 1·320.

Dose.—$\frac{1}{2}$ to 2 fluid drachms.

Contains ten grains of hydrate of chloral in one fluid drachm.

SYRUPUS FERRI IODIDI.

Syrup of Iodide of Iron.

Take of

Iron	1 ounce
Iodine	2 ounces
Refined Sugar	28 ounces
Distilled Water	13 fluid ounces

Prepare a syrup by dissolving the sugar in ten ounces of the water with the aid of a little heat. Digest the iodine and the iron in a flask, with the remaining three ounces of the water, heating slightly and occasionally shaking until the froth becomes white; add now two fluid ounces of the syrup and boil gently for ten minutes; then filter the liquid while still hot into the remainder of the warm syrup, and mix. The product should weigh about two pounds eleven ounces, and its specific gravity should be about 1·385.

It contains 4·3 grains of iodide of iron in 1 fluid drachm.

Dose.—½ to 1 fluid drachm.

SYRUPUS FERRI PHOSPHATIS.

Syrup of Phosphate of Iron.

Take of

Granulated Sulphate of Iron	224 grains
Phosphate of Sodium	200 grains
Bicarbonate of Sodium	56 grains
Concentrated Phosphoric Acid	1¼ fluid ounces
Refined Sugar	8 ounces
Distilled Water	8 fluid ounces

Dissolve the sulphate of iron in about four ounces of boiling water, and the phosphate of sodium in a similar quantity of cold water; mix the solutions, then add the bicarbonate of sodium dissolved in a little water, and, after careful stirring, transfer the precipitate to a calico filter, and wash it with distilled water, till the filtrate ceases to be affected by chloride of barium. Mix the residue on the filter, in a mortar, with the phosphoric acid. As soon as the precipitate is dissolved filter the solution, add water and the sugar, and dissolve without heat. The product should measure exactly twelve fluid ounces; any water which may be necessary, beyond that introduced with the precipitate or with the sugar, being added to form the stated bulk. Its specific gravity is about 1·305.

It contains the equivalent of about one grain of anhydrous phosphate of iron, $Fe_3(PO_4)_2$, in one fluid drachm.

Dose.—1 fluid drachm.

SYRUPUS HEMIDESMI.

Syrup of Hemidesmus.

Take of

Hemidesmus Root, bruised	4 ounces
Refined Sugar	28 ounces
Boiling Distilled Water	1 pint

Infuse the hemidesmus in the water, in a covered vessel, for four hours, and strain. Set it by till the sediment subsides; then decant the clear liquor, add the sugar, and dissolve by help of a little heat. The product should weigh two pounds ten ounces, and its specific gravity be about 1·335.

Dose.—1 fluid drachm.

SYRUPUS LIMONIS.

Syrup of Lemons.

Take of

Fresh Lemon Peel	2 ounces
Lemon Juice, strained	1 pint
Refined Sugar	2¼ pounds

Heat the lemon juice to the boiling point, and, having put it into a covered vessel with the lemon peel, let them stand until they are cold, then filter and dissolve the sugar in the filtered liquid with the aid of heat. The product should weigh three pounds and a half, and its specific gravity be about 1·340.

Dose.—1 fluid drachm.

Preparation containing Syrupus Limonis.
Liquor Magnesii Citratis

SYRUPUS MORI.

Syrup of Mulberries.

Take of

Mulberry Juice	1 pint
Refined Sugar	2¼ pounds
Rectified Spirit	2½ fluid ounces

Heat the mulberry juice to the boiling point, and when it has cooled filter it. Dissolve the sugar in the filtered liquid with the aid of heat, and add the spirit. The product should weigh three pounds six ounces, and its specific gravity be about 1·330.

Dose.—1 fluid drachm.

SYRUPUS PAPAVERIS.

Syrup of Poppies.

Take of

Poppy Capsules, freed from the seeds, and reduced to No. 20 powder	36 ounces
Rectified Spirit	16 fluid ounces
Refined Sugar	4 pounds
Boiling Distilled Water . . .	a sufficiency

Mix the poppy capsules with four pints of the water, and infuse for twenty-four hours, stirring frequently; then pack in a percolator, and adding more of the water allow the liquor slowly to pass until about two gallons have been collected or the mass is exhausted. Evaporate the liquor by a water-bath until it is reduced to three pints. When quite cold add the spirit, let the mixture stand for twelve hours, and filter. Distil off the spirit, the remaining liquor being evaporated to two pints, and then add the sugar. The product should weigh six pounds and a half, and its specific gravity be about 1·330.

Dose.—1 fluid drachm.

SYRUPUS RHEI.

Syrup of Rhubarb.

Take of

Rhubarb Root, in No. 20 powder Coriander Fruit, in No. 20 powder	of each 2 ounces
Refined Sugar	24 ounces
Rectified Spirit	8 fluid ounces
Distilled Water	24 fluid ounces

Mix the rhubarb and coriander; pack them in a percolator; pass the spirit and water, previously mixed, slowly through them; evaporate the liquid that has thus passed until it is reduced to fourteen fluid ounces, and in this, after it has been filtered, dissolve the sugar with the aid of heat. The product should weigh nearly two and a half pounds, and its specific gravity be about 1·310.

Dose.—1 to 4 fluid drachms.

SYRUPUS RHŒADOS.

Syrup of Red Poppy.

Take of

Fresh Red Poppy Petals .	13 ounces
Refined Sugar . . .	2¼ pounds
Distilled Water . . .	1 pint, or a sufficiency
Rectified Spirit . . .	2½ fluid ounces

Add the petals gradually to the water heated in a water-bath, frequently stirring, and afterwards, the vessel being removed, infuse for twelve hours. Then press out the liquor, strain, add the sugar, and dissolve by means of heat. When nearly cold, add the spirit, and as much distilled water as may be necessary to make up for loss in the process, so that the product shall weigh three pounds ten ounces. Its specific gravity should be about 1·330.

Dose.—1 fluid drachm.

SYRUPUS ROSÆ GALLICÆ.

Syrup of Red Roses.

Take of

Dried Red-Rose Petals	2 ounces
Refined Sugar	30 ounces
Boiling Distilled Water	1 pint

Infuse the petals in the water for two hours, squeeze through calico, heat the liquor to the boiling point, and filter. Dissolve the sugar in the liquor by means of heat. The product should weigh two pounds fourteen ounces, and its specific gravity be about 1·335.

Dose.—1 fluid drachm.

SYRUPUS SCILLÆ.

Syrup of Squill.

Take of

Vinegar of Squill	1 pint
Refined Sugar	2½ pounds

Dissolve with the aid of a little heat. Specific gravity about 1·345.

Dose.—½ to 1 fluid drachm.

SYRUPUS SENNÆ.

Syrup of Senna.

Take of

Senna, broken small	16 ounces
Oil of Coriander	3 minims
Refined Sugar	24 ounces
Distilled Water	5 pints, or a sufficiency
Rectified Spirit	3 fluid ounces

Digest the senna in seventy ounces of the water for twenty-four hours at a temperature of 120° F. (48°·9 C.); press out the liquor and strain it: Digest the marc in thirty ounces of the water for six hours at the same temperature; again press out the liquor and strain it. Evaporate the mixed liquors in a water-bath to ten fluid ounces, and, when cold, add the rectified spirit, previously mixed with the oil of coriander. Clarify by filtration, and wash what remains on the filter with distilled water, until the washings make up the filtrate to sixteen fluid ounces. Then add the sugar, and dissolve by aid of heat. The product should weigh two pounds ten ounces, and its specific gravity be about 1·310.

Dose.—1 to 4 fluid drachms.

SYRUPUS TOLUTANUS.

Syrup of Tolu.

Take of

Balsam of Tolu	1¼ ounce
Refined Sugar	2 pounds
Distilled Water	1 pint, or a sufficiency

Boil the balsam in the water for half an hour in a lightly covered vessel, stirring occasionally. Then remove from the fire and add distilled water, if necessary, so that the liquid shall measure sixteen ounces. Filter the solution when cold, add the sugar, and dissolve with the aid of a steam or water bath. The product should weigh three pounds, and its specific gravity be about 1·330.

Dose.—1 fluid drachm.

SYRUPUS ZINGIBERIS.

Syrup of Ginger.

Take of

Strong Tincture of Ginger	6 fluid drachms
Syrup	19 fluid ounces

Mix, with agitation.

Dose.—1 fluid drachm.

TABACI FOLIA.

Leaf Tobacco.

The dried leaves of Nicotiana Tabacum, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iii. plate 191.

Characters and Tests.—Large, being sometimes more than twenty inches long; ovate, ovate-lanceolate, or oval-oblong, acute, entire, brown, brittle, glandular-hairy; having a characteristic odour and nauseous-bitter acrid taste; yielding, when distilled with solution of potash, an alkaline fluid, which has the peculiar odour of nicotina, and precipitates with perchloride of platinum and tincture of galls.

TABELLÆ NITROGLYCERINI.

Tablets of Nitroglycerine.

Tablets of chocolate each weighing two and a half grains and containing one-hundredth of a grain of pure nitroglycerine.

Dose.—1 or 2 tablets.

TAMARINDUS.

Tamarind.

The preserved pulp of the fruit of Tamarindus indica, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 92.

Characters and Test.—A reddish-brown moist sugary mass, enclosing strong branched fibres, and brown shining seeds, each enclosed in a tough membranous coat. Taste agreeable, refreshing, subacid. A piece of bright iron, left in contact with the pulp for an hour, does not exhibit any deposit of copper.

Preparation.—Confectio Sennæ, 9 parts to 75.

TARAXACI RADIX.

Dandelion Root.

The fresh and dried roots of Taraxacum officinale, *Wiggers* (Taraxacum Dens-leonis, *Desf.*); *Bentl. and Trim. Med. Pl.* vol. iii. plate 159. Collected in the autumn from indigenous plants.

Characters.—Root when fresh frequently a foot or more in length, and half an inch or more in diameter, smooth and yellowish-brown externally, whitish within. It breaks readily with a short fracture, and a milky juice exudes; the fractured surface presenting faint concentric rings. When dried it is more or less shrivelled, deeply furrowed longitudinally, dark brown or blackish, breaks with a short fracture, and the exposed surface shows a yellow porous central woody axis, surrounded by a thick whitish bark, with a variable number, according to its size, of irregular well-marked concentric rings. Inodorous; taste bitter.

Preparations.

Decoctum Taraxaci (dried) . 1 ounce to 1 pint
Extractum Taraxaci (fresh)
,, ,, ,, Liquidum
Succus Taraxaci (fresh)

TEREBINTHINA CANADENSIS.

Canada Turpentine.

Synonym.—Canada Balsam.

The turpentine obtained by puncturing or incising the bark of the trunk and branches of Pinus balsamea, *Linn.* (Abies balsamea, *Mill.*); *Lambert, Ill. Gen. Pinus,* 2nd ed. plate 33.

Characters.—A pale-yellow and faintly greenish transparent oleo-resin, of the consistence of thin honey, with a peculiar agreeable terebinthinate odour, and a slightly bitter feebly acrid taste; by exposure to the air drying very slowly into a transparent adhesive varnish, and solidifying when mixed with about a sixth of its weight of magnesia.

Dose.—20 to 30 grains.

Preparations.

Charta Epispastica | Collodium Flexile

THERIACA.

Treacle.

The uncrystallised residue of the refining of sugar.

Characters.—A thick fermentable syrup of a golden colour, very sweet; not crystallising by rest or spontaneous evaporation. Specific gravity about 1·40.

Test.—Free from empyreumatic odour or flavour.

Preparations.

Pilula Aloes et Myrrhæ	Pilula Rhei Composita
,, Asafœtidæ Composita	,, Scillæ Composita
,, Conii Composita	Tinctura Chloroformi et Morphinæ
,, Ipecacuanhæ cum Scilla	

THUS AMERICANUM.

Common Frankincense.

The concrete turpentine which is scraped off the trunks of Pinus australis, *Mich.* (Pinus palustris, *Mill.*), and Pinus Tæda, *Linn.*; *Lamb. Ill. Gen. Pin.* 2nd ed. plate 20, 17 and 18.

Characters.—When fresh it is a softish yellow opaque tough solid, with the same odour as crude American turpentine, but by keeping it becomes dry and brittle, darker in colour, and of a milder odour.

Preparation.—Emplastrum Picis.

THYMOL.

Thymol.

$C_{10}H_{13}HO$.

A stearoptene obtained from the volatile oils of Thymus vulgaris, *Linn.*, Monarda punctata, *Linn.*, and Carum Ajowan, *Benth. and Hook.* (Ptychotis Ajowan, *DC.*), *Bentl. and Trim. Med. Pl.* vol. iii. plates 205 and 208, and vol. ii. plate 120, by saponifying with caustic soda and treating the separated soap with hydrochloric acid, or from a distilled fraction of the oil by exposure at a low temperature. It may be purified by recrystallisation from alcohol.

Characters and Tests.—Large oblique prismatic crystals having the odour of thyme and a pungent aromatic flavour. They sink in cold water, but on heating the mixture to a temperature of 110° to 125° F. (43°·3 to 51°·7 C.) they melt and rise to the surface. Slightly soluble in cold water, freely soluble in alcohol, ether, and solutions of alkalies. The crystals volatilise completely at the temperature of a water-bath. A solution of thymol in half its bulk of glacial acetic acid, warmed with an equal volume of sulphuric acid, assumes a reddish-violet colour.

Dose.—½ to 2 grains.

TINCTURA ACONITI.

Tincture of Aconite.

Take of

Aconite Root from plants cultivated in Britain, in No. 40 powder	2½ ounces
Rectified Spirit	1 pint

Macerate the aconite root for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient rectified spirit to make one pint.

Dose.—5 to 15 minims.

TINCTURA ALOES.

Tincture of Aloes.

Take of

Socotrine Aloes, in coarse powder	½ ounce
Extract of Liquorice	1½ ounce
Proof Spirit	a sufficiency

Macerate the aloes and extract of liquorice in fifteen fluid ounces of the spirit for seven days, in a closed vessel, with occasional agitation, then filter, and add sufficient proof spirit to make one pint.

Dose.—1 to 2 fluid drachms.

TINCTURA

Tincture of Arnica.

Take of

Arnica Rhizome, in No. 40 powder . .	1 ounce
Rectified Spirit	1 pint

Macerate the arnica for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient rectified spirit to make one pint.

Dose.—½ to 1 fluid drachm.

TINCTURA ASAFŒTIDÆ.

Tincture of Asafœtida.

Take of

Asafœtida, in small fragments . . .	2½ ounces
Rectified Spirit	a sufficiency

Macerate the asafœtida in fifteen fluid ounces of the spirit for seven days in a closed vessel, with occasional agitation, then filter, and add sufficient rectified spirit to make one pint.

Dose.—½ to 1 fluid drachm.

TINCTURA AURANTII.

Tincture of Orange Peel.

Take of

Bitter-Orange Peel, cut small and bruised	2 ounces
Proof Spirit	1 pint

Macerate for seven days in a closed vessel, with occasional agitation, then strain, press, and filter, and add sufficient proof spirit to make one pint.

Dose.—1 to 2 fluid drachms.

Preparations.

Mistura Ferri Aromatica . . .	1 volume in 32
Syrupus Aurantii	1 volume in 8
Tinctura Quininæ	

TINCTURA AURANTII RECENTIS.

Tincture of Fresh Orange Peel.

Take of

Bitter Orange .	of each . .	a sufficiency
Rectified Spirit .		

Carefully cut from the orange the coloured part of the rind in thin slices, and macerate six ounces of this in eighteen fluid ounces of the spirit for a week, with frequent agitation. Then pour off the liquid, press the dregs, mix the liquid products, and filter. Finally, if necessary, add spirit to make one pint.

Dose.—1 fluid drachm to 2 fluid drachms.

TINCTURA BELLADONNÆ.

Tincture of Belladonna.

Take of

Belladonna Leaves, in No. 20 powder .	1 ounce
Proof Spirit	1 pint

Macerate the leaves for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—5 to 20 minims.

TINCTURA BENZOINI COMPOSITA.

Compound Tincture of Benzoin.

Take of

Benzoin, in coarse powder	2 ounces
Prepared Storax	1½ ounce
Balsam of Tolu	½ ounce
Socotrine Aloes	160 grains
Rectified Spirit	1 pint

Macerate for seven days in a closed vessel, with occasional agitation, then filter, and add sufficient rectified spirit, if required, to make one pint.

Dose.—½ to 1 fluid drachm.

TINCTURA BUCHU.

Tincture of Buchu.

Take of

Buchu Leaves, in No. 20 powder	2½ ounces
Proof Spirit	1 pint

Macerate the buchu for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—1 to 2 fluid drachms.

TINCTURA CALUMBÆ.

Tincture of Calumba.

Take of

Calumba Root, cut small	2½ ounces
Proof Spirit	1 pint

Macerate the calumba for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—½ to 2 fluid drachms.

TINCTURA CAMPHORÆ COMPOSITA.

Compound Tincture of Camphor.

Take of

Opium, in powder	40 grains
Benzoic Acid	40 grains
Camphor	30 grains
Oil of Anise	½ fluid drachm
Proof Spirit	1 pint

Macerate for seven days in a closed vessel, with occasional agitation, then filter, and add sufficient proof spirit to make one pint.

It contains the soluble matter of a quarter of a grain of the opium in one fluid drachm.

Dose.—15 minims to 1 fluid drachm.

TINCTURA CANNABIS INDICÆ.

Tincture of Indian Hemp.

Take of

Extract of Indian Hemp	1 ounce
Rectified Spirit	1 pint

Dissolve the extract of hemp in the spirit.

Dose.—5 to 20 minims.

TINCTURA CANTHARIDIS.

Tincture of Cantharides.

Take of

Cantharides, in coarse powder	¼ ounce
Proof Spirit	1 pint

Macerate for seven days in a closed vessel, with occasional agitation, strain, press, filter, and add sufficient proof spirit to make one pint.

Dose.—5 to 20 minims.

TINCTURA CAPSICI.

Tincture of Capsicum.

Take of

Capsicum Fruit, bruised	¾ ounce
Rectified Spirit	1 pint

Macerate the capsicum for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient rectified spirit to make one pint.

Dose.—10 to 20 minims.

TINCTURA CARDAMOMI COMPOSITA.

Compound Tincture of Cardamoms.

Take of

Cardamom Seeds, bruised . . .	¼ ounce
Caraway Fruit, bruised	¼ ounce
Raisins, freed from seeds	2 ounces
Cinnamon Bark, bruised	½ ounce
Cochineal, in powder	55 grains
Proof Spirit	1 pint

Macerate the solid ingredients for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—½ to 2 fluid drachms.

Preparations.

Decoctum Aloes Compositum	1 volume in 8½
Mistura Ferri Aromatica	8 volumes in 16
„ Sennæ Composita	1 volume in 14
Tinctura Chloroformi Composita	1 volume in 2

TINCTURA CASCARILLÆ.

Tincture of Cascarilla.

Take of

Cascarilla Bark, in No. 40 powder	2½ ounces
Proof Spirit	1 pint

Macerate the cascarilla for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—½ to 2 fluid drachms.

TINCTURA CATECHU.

Tincture of Catechu.

Take of

Catechu, in coarse powder	2½ ounces
Cinnamon Bark, bruised	1 ounce
Proof Spirit	1 pint

Macerate for seven days in a closed vessel, with occasional agitation; strain, press, filter, and add sufficient proof spirit to make one pint.

Dose.—½ to 2 fluid drachms.

TINCTURA CHIRATÆ.

Tincture of Chiretta.

Take of

Chiretta, cut small and bruised	2½ ounces
Proof Spirit	1 pint

Macerate the chiretta for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—½ to 2 fluid drachms.

TINCTURA CHLOROFORMI COMPOSITA.

Compound Tincture of Chloroform.

Take of

Chloroform	2 fluid ounces
Rectified Spirit	8 fluid ounces
Compound Tincture of Cardamoms .	10 fluid ounces

Mix.

Dose.—20 to 60 minims.

TINCTURA CHLOROFORMI ET MORPHINÆ.

Tincture of Chloroform and Morphine.

Take of

		Contains in a 10-minim dose
Chloroform . . .	1 fluid ounce	1¼ minim
Ether	2 fluid drachms	⅓ minim
Rectified Spirit . . .	1 fluid ounce	1¼ minim
Hydrochlorate of Morphine	8 grains	$\frac{1}{48}$ grain
Diluted Hydrocyanic Acid .	½ fluid ounce	⅝ minim
Oil of Peppermint . .	4 minims	$\frac{1}{80}$ minim
Liquid Extract of Liquorice	1 fluid ounce	1¼ minim
Treacle	1 fluid ounce	
Syrup	a sufficiency	

Dissolve the hydrochlorate of morphine and oil of peppermint in the spirit, and add the chloroform and ether. Mix the liquid extract of liquorice and treacle with three fluid ounces of syrup, add this to the previously formed solution, mix them thoroughly, add the hydrocyanic acid, and increase the volume to eight fluid ounces by further addition of syrup.

Dose.—5 to 10 minims.

TINCTURA CIMICIFUGÆ.

Tincture of Cimicifuga.

Synonym.—Tinctura Actææ; Tincture of Actæa.

Take of

Cimicifuga, in No. 40 powder . . .	2½ ounces
Proof Spirit	1 pint

Macerate the cimicifuga for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the liquid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—15 to 60 minims.

TINCTURA CINCHONÆ.

Tincture of Cinchona.

Take of

Red Cinchona Bark, in No. 40 powder .	4 ounces
Proof Spirit	1 pint

Macerate the cinchona bark for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—½ to 2 fluid drachms.

TINCTURA CINCHONÆ COMPOSITA.

Compound Tincture of Cinchóna.

Take of

Red Cinchona Bark, in No. 40 powder .	2 ounces
Bitter-Orange Peel, cut small, and bruised	1 ounce
Serpentary Root, bruised . . .	½ ounce
Saffron	55 grains
Cochineal, in powder	28 grains
Proof Spirit	1 pint

Macerate the cinchona bark, and the other solid ingredients, for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—½ to 2 fluid drachms.

TINCTURA CINNAMOMI.

Tincture of Cinnamon.

Take of

Cinnamon Bark, in coarse powder . .	2½ ounces
Rectified Spirit	1 pint

Macerate the cinnamon for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—½ to 2 fluid drachms.

TINCTURA COCCI.

Tincture of Cochineal.

Take of

Cochineal, in powder	2½ ounces
Proof Spirit	1 pint

Macerate for seven days in a closed vessel, with occasional agitation; strain, press, filter, and add sufficient proof spirit to make one pint.

TINCTURA COLCHICI SEMINUM.

Tincture of Colchicum Seeds.

Take of

Colchicum Seeds, finely comminuted	2½ ounces
Proof Spirit	1 pint

Macerate the colchicum for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—10 to 30 minims.

TINCTURA CONII.

Tincture of Hemlock.

Take of

Hemlock Fruit, finely comminuted	2½ ounces
Proof Spirit	1 pint

Macerate the hemlock fruit for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—20 to 60 minims.

TINCTURA CROCI.

Tincture of Saffron.

Take of

Saffron	1 ounce
Proof Spirit	1 pint

Macerate the saffron for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

TINCTURA CUBEBÆ.

Tincture of Cubebs.

Take of

Cubebs, in powder	2½ ounces
Rectified Spirit	1 pint

Macerate the cubebs for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient rectified spirit to make one pint.

Dose.—½ to 2 fluid drachms.

TINCTURA DIGITALIS.

Tincture of Foxglove.

Take of

Foxglove Leaves, in No. 20 powder .	2½ ounces
Proof Spirit	1 pint

Macerate the foxglove for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—10 to 30 minims.

TINCTURA ERGOTÆ.

Tincture of Ergot.

Take of

Ergot, finely comminuted . . .	5 ounces
Proof Spirit	1 pint

Macerate the ergot for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—5 to 30 minims.

TINCTURA FERRI ACETATIS.

Tincture of Acetate of Iron.

Take of

Strong Solution of Acetate of Iron	5 fluid ounces
Acetic Acid	1 fluid ounce
Rectified Spirit	5 fluid ounces
Distilled Water	9 fluid ounces

Mix, and then add sufficient distilled water to make one pint. Preserve in a stoppered bottle.

Dose.—5 to 30 minims.

TINCTURA FERRI PERCHLORIDI.

Tincture of Perchloride of Iron.

Synonym.—Tinctura Ferri Sesquichloridi.

Take of

Strong Solution of Perchloride of Iron	5 fluid ounces
Rectified Spirit	5 fluid ounces
Distilled Water	10 fluid ounces

Mix, and then add sufficient distilled water to make one pint. Preserve in a stoppered bottle.

Dose.—10 to 30 minims.

TINCTURA GALLÆ.

Tincture of Galls.

Take of

Galls, in No. 40 powder	2½ ounces
Proof Spirit	1 pint

Macerate the galls for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—½ to 2 fluid drachms.

TINCTURA GELSEMII.

Tincture of Gelsemium.

Take of

Gelsemium, in No. 40 powder	2½ ounces
Proof Spirit	1 pint

Macerate the gelsemium for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient spirit to make one pint.

Dose.—5 to 20 minims.

TINCTURA GENTIANÆ COMPOSITA.

Compound Tincture of Gentian.

Take of

Gentian Root, cut small and bruised	1½ ounce
Bitter-Orange Peel, cut small and bruised	¾ ounce
Cardamom Seeds, bruised	¼ ounce
Proof Spirit	1 pint

Macerate the solid ingredients for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—½ to 2 fluid drachms.

TINCTURA GUAIACI AMMONIATA.

Ammoniated Tincture of Guaiacum.

Take of

Guaiacum Resin, in powder	4 ounces
Aromatic Spirit of Ammonia	a sufficiency

Macerate the guaiacum in fifteen fluid ounces of the aromatic spirit of ammonia for seven days in a well-closed vessel, with occasional agitation, and filter; then add sufficient aroatic spirit of ammonia to make one pint.

Dose.—½ to 1 fluid drachm.

TINCTURA HYOSCYAMI.

Tincture of Henbane.

Take of

Henbane leaves, or flowering tops in No. 20 powder	2½ ounces
Proof Spirit	1 pint

Macerate the henbane for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—½ to 1 fluid drachm.

TINCTURA IODI.

Tincture of Iodine.

Take of

Iodine	½ ounce
Iodide of Potassium	½ ounce
Rectified Spirit	1 pint

Dissolve the iodine and the iodide of potassium in the spirit.

Dose.—5 to 20 minims.

Preparation.—Vapor Iodi.

TINCTURA JABORANDI.

Tincture of Jaborandi.

Take of

Jaborandi, in No. 40 powder	5 ounces
Proof Spirit	1 pint

Macerate the jaborandi for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—½ to 1 fluid drachm.

TINCTURA JALAPÆ.

Tincture of Jalap.

Take of

Jalap, in No. 40 powder	2½ ounces
Proof Spirit	1 pint

Macerate the jalap for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—½ to 2 fluid drachms.

TINCTURA KINO.

Tincture of Kino.

Take of

Kino, in coarse powder	2 ounces
Glycerine	3 fluid ounces
Distilled Water	5 fluid ounces
Rectified Spirit	12 fluid ounces

Macerate for seven days in a closed vessel, with occasional agitation, filter, and add sufficient rectified spirit to make one pint.

Dose.—½ to 2 fluid drachms.

TINCTURA KRAMERIÆ.

Tincture of Rhatany.

Take of

Rhatany Root, in No. 40 powder	2½ ounces
Proof Spirit	1 pint

Macerate the rhatany root for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—½ to 2 fluid drachms.

TINCTURA LARICIS.

Tincture of Larch.

Take of

Larch Bark, in No. 40 powder . .	2½ ounces
Rectified Spirit	1 pint

Macerate the larch bark for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient rectified spirit to make one pint.

Dose.—20 to 30 minims.

TINCTURA LAVANDULÆ COMPOSITA.

Compound Tincture of Lavender.

Synonym.—Spiritus Lavandulæ Compositus.

Take of

Oil of Lavender	1½ fluid drachm
Oil of Rosemary	10 minims
Cinnamon Bark, bruised . .	150 grains
Nutmeg, bruised	150 grains
Red Sandal-wood	300 grains
Rectified Spirit	2 pints

Macerate the cinnamon, nutmeg, and red sandal-wood in the spirit for seven days in a closed vessel, with occasional agitation; then strain and press, dissolve the oils in the strained tincture, filter, and add sufficient rectified spirit to make two pints.

Dose.—½ to 2 fluid drachms.

Preparation.—Liquor Arsenicalis.

TINCTURA LIMONIS.

Tincture of Lemon Peel.

Take of

Fresh Lemon Peel, cut small . . .	2½ ounces
Proof Spirit	1 pint

Macerate for seven days in a closed vessel, with occasional agitation; strain, press, and filter; then add sufficient proof spirit to make one pint.

Dose.—½ to 2 fluid drachms.

TINCTURA LOBELIÆ.

Tincture of Lobelia.

Take of

Lobelia, in No. 40 powder . . .	2½ ounces
Proof Spirit	1 pint

Macerate the lobelia for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—10 minims to ½ fluid drachm.

TINCTURA LOBELIÆ ÆTHEREA.

Ethereal Tincture of Lobelia.

Take of

Lobelia, in coarse powder . . .	2½ ounces
Spirit of Ether	1 pint

Macerate for seven days in a closed vessel, with occasional agitation; then strain, press, filter, and add sufficient spirit of ether to make one pint.

Dose.—10 minims to ½ fluid drachm.

TINCTURA LUPULI.

Tincture of Hop.

Take of

Hop	2½ ounces
Proof Spirit	1 pint

Macerate the hop for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—½ to 2 fluid drachms.

TINCTURA MYRRHÆ.

Tincture of Myrrh.

Take of

Myrrh, in coarse powder . . .	2½ ounces
Rectified Spirit	1 pint

Macerate the myrrh for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient rectified spirit to make one pint.

Dose.—½ to 1 fluid drachm.

TINCTURA NUCIS VOMICÆ.

Tincture of Nux Vomica.

Take of

Extract of Nux Vomica	183 grains
Distilled Water	4 fluid ounces
Rectified Spirit	a sufficiency

Mix sufficient of the spirit with the water to produce twenty fluid ounces, and dissolve the extract in the mixture.

One fluid ounce of this tincture will contain one grain of the alkaloids of nux vomica.

Dose.—10 to 20 minims.

TINCTURA OPII.

Tincture of Opium.

Take of

Opium, in powder	1½ ounce
Proof Spirit	1 pint

Macerate for seven days in a closed vessel, with occasional agitation; then strain, press, filter, and add sufficient proof spirit to make one pint.

It contains the soluble matter of 33 grains of the opium, nearly, in 1 fluid ounce; or about 3·3 grains of morphine in one fluid ounce, or about 0·75 per cent. of morphine, or about 1¼ per cent. of bimeconate of morphine, besides the other alkaloidal salts of opium.

Dose.—5 to 40 minims.

Preparations.—Enema Opii; Linimentum Opii.

TINCTURA OPII AMMONIATA.

Ammoniated Tincture of Opium.

Take of

Opium, in powder	100 grains
Saffron, cut small	180 grains
Benzoic Acid	180 grains
Oil of Anise	1 fluid drachm
Strong Solution of Ammonia	4 fluid ounces
Rectified Spirit	16 fluid ounces

Macerate for seven days in a well-closed vessel, with occasional agitation; then strain, press, filter, and add sufficient rectified spirit to make one pint.

It contains the soluble matter of 0·62 grain of the opium in a fluid drachm, or 5 grains in a fluid ounce.

Dose.—½ to 1 fluid drachm.

TINCTURA PODOPHYLLI.

Tincture of Podophyllum.

Take of

Resin of Podophyllum	160 grains	or	1 part
Rectified Spirit	1 pint	„	54·68 fluid parts

Dissolve and filter.

It contains one grain of the resin in one fluid drachm.

Dose.—15 minims to 1 fluid drachm.

TINCTURA PYRETHRI.

Tincture of Pellitory.

Take of

Pellitory Root, in No. 40 powder	4 ounces
Rectified Spirit	1 pint

Macerate the pellitory for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient rectified spirit to make one pint.

TINCTURA QUASSIÆ.

Tincture of Quassia.

Take of

Quassia Wood, in chips . . .	¾ ounce
Proof Spirit	1 pint

Macerate for seven days in a closed vessel, with occasional agitation; then strain, press, filter, and add sufficient proof spirit to make one pint.

Dose.—½ to 2 fluid drachms.

TINCTURA QUININÆ.

Tincture of Quinine.[1]

Take of

Hydrochlorate of Quinine . .	160 grains
Tincture of Orange Peel . . .	1 pint

Dissolve the hydrochlorate of quinine in the tincture with the aid of a little heat; then allow the solution to remain for three days in a closed vessel, shaking it occasionally; and afterwards filter.

Dose.—½ to 2 fluid drachms.

TINCTURA QUININÆ AMMONIATA.

Ammoniated Tincture of Quinine.

Take of

Sulphate of Quinine . . .	160 grains
Solution of Ammonia . . .	2½ fluid ounces
Proof Spirit	17½ fluid ounces

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[1] This tincture is about one-ninth stronger in alkaloid than the corresponding tincture of the British Pharmacopœia, 1867.

Dissolve the sulphate of quinine in the spirit with the aid of a little heat, and add the solution of ammonia.

Dose.—½ to 2 fluid drachms.

TINCTURA RHEI.

Tincture of Rhubarb.

Take of

Rhubarb Root, in No. 20 powder	2 ounces
Cardamom Seeds, bruised	¼ ounce
Coriander Fruit, bruised	¼ ounce
Saffron	¼ ounce
Proof Spirit	1 pint

Macerate the solid ingredients for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—1 to 2 fluid drachms, as a stomachic; 4 to 8 fluid drachms, as a purgative.

TINCTURA SABINÆ.

Tincture of Savin.

Take of

Savin Tops, dried and coarsely powdered	2½ ounces
Proof Spirit	1 pint

Macerate the savin for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—20 minims to 1 fluid drachm.

TINCTURA SCILLÆ.

Tincture of Squill.

Take of

Squill, bruised	2½ ounces
Proof Spirit	1 pint

Macerate the squill for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—10 to 30 minims.

TINCTURA SENEGÆ.

Tincture of Senega.

Take of

Senega Root, in No. 40 powder . .	2½ ounces
Proof Spirit	1 pint

Macerate the senega for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—½ to 2 fluid drachms.

TINCTURA SENNÆ.

Tincture of Senna.

Take of

Senna, broken small	2½ ounces
Raisins, freed from seeds . . .	2 ounces
Caraway Fruit, bruised	½ ounce
Coriander Fruit, bruised . . .	½ ounce
Proof Spirit.	1 pint

Macerate the solid ingredients for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—1 to 4 fluid drachms.

Preparation.

Mistura Sennæ Composita .	1 fluid drachm in 1 fluid ounce

TINCTURA SERPENTARIÆ.

Tincture of Serpentary.

Take of

Serpentary Rhizome, in No. 40 powder .	2½ ounces
Proof Spirit	1 pint

Macerate the serpentary for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—½ to 2 fluid drachms.

TINCTURA STRAMONII.

Tincture of Stramonium.

Take of

Stramonium Seeds, bruised . . .	2½ ounces
Proof Spirit	1 pint

Macerate the stramonium for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—10 to 30 minims.

TINCTURA SUMBUL.

Tincture of Sumbul.

Take of

Sumbul Root, in No. 40 powder . .	2½ ounces
Rectified Spirit	1 pint

Macerate the sumbul for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—10 to 30 minims.

TINCTURA TOLUTANA.

Tincture of Tolu.

Take of

Balsam of Tolu	2½ ounces
Rectified Spirit	a sufficiency

Macerate the balsam of tolu in fifteen fluid ounces of the spirit, in a closed vessel, with occasional agitation, for six hours, or until the balsam is dissolved; then filter, and add sufficient rectified spirit to make one pint.

Dose.—20 to 40 minims.

Preparations.

Trochisci Acidi Tannici
Trochisci Morphinæ
Trochisci Morphinæ et Ipecacuanhæ
Trochisci Opii.

TINCTURA VALERIANÆ.

Tincture of Valerian.

Take of

Valerian Rhizome, in No. 40 powder	2½ ounces
Proof Spirit	1 pint

Macerate the valerian root for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—1 to 2 fluid drachms.

TINCTURA VALERIANÆ AMMONIATA.

Ammoniated Tincture of Valerian.

Take of

Valerian Rhizome, in No. 40 powder .	2½ ounces
Aromatic Spirit of Ammonia . .	1 pint

Macerate for seven days in a well-closed vessel, with occasional agitation; then strain, press, filter, and add sufficient aromatic spirit of ammonia to make one pint.

Dose.—½ to 1 fluid drachm.

TINCTURA VERATRI VIRIDIS.

Tincture of Green Hellebore.

Take of

Green Hellebore Rhizome, in No. 40 powder	4 ounces
Rectified Spirit	1 pint

Macerate the hellebore for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient rectified spirit to make one pint.

Dose.—5 to 20 minims.

TINCTURA ZINGIBERIS.

Tincture of Ginger.

Take of

Ginger, in powder	2½ ounces
Rectified Spirit	1 pint

Macerate the ginger for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient rectified spirit to make one pint.

Dose.—15 minims to 1 fluid drachm.

TINCTURA ZINGIBERIS FORTIOR.

Strong Tincture of Ginger.

Synonym.—Essence of Ginger.

Take of

Ginger, in fine powder	10 ounces
Rectified Spirit	a sufficiency

Pack the ginger tightly in a percolator, and pour over it carefully half a pint of the spirit. At the expiration of two hours add more spirit, and let it percolate slowly until one pint of tincture has been collected.

Dose.—5 to 20 minims.

Preparations.

Acidum Sulphuricum Aromaticum .	1 fluid part in 23
Pilula Scammonii Composita	
Syrupus Zingiberis . .	6 fluid drachms to 1 pint

TRAGACANTHA.
Tragacanth.

A gummy exudation obtained by making incisions in the stem of Astragalus gummifer, *Labill.*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 73; and some other species of Astragalus, *Linn.*

Characters and Tests.—In white or somewhat yellowish flaky pieces of varying length and breadth; which are thin, irregularly oblong or roundish, more or less curved, marked on the surface by arched or concentric ridges, somewhat translucent, tough, but rendered more pulverisable at a temperature of 120° Fahr. (48°·9 C.); inodorous and almost tasteless. It is very sparingly soluble in cold water, but swells into a gelatinous mass, which is tinged violet or blue by tincture of iodine. After maceration in cold water the fluid portion is not precipitated by the addition of rectified spirit.

Preparations.

Confectio Opii	1 part in 120, nearly
,, Sulphuris . . .	1 part in 246
Glycerinum Tragacanthæ	
Mucilago Tragacanthæ . . .	60 grains to 10 fluid ounces
Pulvis Opii Compositus . .	1 part in 80
,, Tragacanthæ Compositus .	1 part in 6

TROCHISCI ACIDI BENZOICI.

Benzoic Acid Lozenges.

Take of

Benzoic Acid	360 grains
Refined Sugar, in powder	25 ounces
Gum Acacia, in powder	1 ounce
Mucilage of Gum Acacia	2 fluid ounces
Distilled Water	a sufficiency

Mix the benzoic acid, sugar, and gum, add the mucilage and water to form a proper mass. Divide into 720 lozenges, and dry them in a hot-air chamber at a moderate temperature.

Each lozenge contains half a grain of benzoic acid.

Dose.—1 to 5 lozenges.

TROCHISCI ACIDI TANNICI.

Tannic Acid Lozenges.

Take of

Tannic Acid	360 grains
Tincture of Tolu	½ fluid ounce
Refined Sugar, in powder	25 ounces
Gum Acacia, in powder	1 ounce
Mucilage of Gum Acacia	2 fluid ounces
Distilled Water	1 fluid ounce

Dissolve the tannic acid in the water; add, first, the tincture of tolu, previously mixed with the mucilage, then the gum and the sugar, also previously well mixed. Form the whole into a proper mass; divide it into 720 lozenges, and dry these in a hot-air chamber at a moderate temperature.

Each lozenge contains half a grain of tannic acid.

Dose.—1 to 6 lozenges.

TROCHISCI BISMUTHI.

Bismuth Lozenges.

Take of

Subnitrate of Bismuth . . .	1440 grains
Carbonate of Magnesium . .	4 ounces
Precipitated Carbonate of Calcium .	6 ounces
Refined Sugar	29 ounces
Gum Acacia, in powder . . .	1 ounce
Mucilage of Gum Acacia . . .	2 fluid ounces
Rose Water	a sufficiency

Mix the dry ingredients, then add the mucilage, and form the whole into a proper mass with rose water. Divide the mass into 720 lozenges, and dry these in a hot-air chamber at a moderate temperature.

Each lozenge contains two grains of subnitrate of bismuth.

Dose.—1 to 6 lozenges.

TROCHISCI CATECHU.

Catechu Lozenges.

Take of

Catechu, in powder	720 grains
Refined Sugar, in powder . . .	25 ounces
Gum Acacia, in powder . . .	1 ounce
Mucilage of Gum Acacia . . .	2 fluid ounces
Distilled Water	a sufficiency

Mix the catechu, sugar, and gum, and add the mucilage and water to form a proper mass. Divide into 720 lozenges, and dry these in a hot-air chamber at a moderate temperature.

Each lozenge contains one grain of catechu.

Dose.—1 to 6 lozenges.

TROCHISCI FERRI REDACTI.

Reduced Iron Lozenges.

Take of

Reduced Iron	720 grains
Refined Sugar, in powder	25 ounces
Gum Acacia, in powder	1 ounce
Mucilage of Gum Acacia	2 fluid ounces
Distilled Water	1 fluid ounce, or a sufficiency

Mix the iron, sugar, and gum, and add the mucilage and water to form a proper mass. Divide into 720 lozenges, and dry these in a hot-air chamber at a moderate temperature.

Each lozenge contains one grain of reduced iron.

Dose.—1 to 6 lozenges.

TROCHISCI IPECACUANHÆ.

Ipecacuanha Lozenges.

Take of

Ipecacuanha, in powder	180 grains
Refined Sugar, in powder	25 ounces
Gum Acacia, in powder	1 ounce
Mucilage of Gum Acacia	2 fluid ounces
Distilled Water	1 fluid ounce, or a sufficiency

Mix the powders and add the mucilage and water to form a proper mass. Divide into 720 lozenges, and dry these in a hot-air chamber at a moderate temperature.

Each lozenge contains a quarter of a grain of ipecacuanha.

Dose.—1 to 8 lozenges.

TROCHISCI MORPHINÆ.

Morphine Lozenges.

Take of

Hydrochlorate of Morphine	20 grains
Tincture of Tolu	½ fluid ounce
Refined Sugar, in powder	24 ounces
Gum Acacia, in powder	1 ounce
Mucilage of Gum Acacia	a sufficiency
Distilled Water	½ fluid ounce

Dissolve the hydrochlorate of morphine in the water; add this solution to the tincture of tolu, previously mixed with two fluid ounces of the mucilage; then add the gum and sugar, previously mixed, and more mucilage if necessary to form a proper mass. Divide into 720 lozenges, and dry these in a hot-air chamber at a moderate temperature.

Each lozenge contains one thirty-sixth of a grain of hydrochlorate of morphine.

Dose.—1 to 6 lozenges.

TROCHISCI MORPHINÆ ET IPECACUANHÆ.

Morphine and Ipecacuanha Lozenges.

Take of

Hydrochlorate of Morphine	20 grains
Ipecacuanha, in fine powder	60 grains
Tincture of Tolu	½ fluid ounce
Refined Sugar, in powder	24 ounces
Gum Acacia, in powder	1 ounce
Mucilage of Gum Acacia	a sufficiency
Distilled Water	½ fluid ounce

Dissolve the hydrochlorate of morphine in the water; add this solution to the tincture of tolu, previously mixed with two fluid ounces of the mucilage; then add the ipecacuanha, gum, and sugar, previously mixed, and more mucilage if necessary to form a proper mass. Divide into 720 lozenges, and dry these in a hot-air chamber at a moderate temperature.

Each lozenge contains one thirty-sixth of a grain of hydrochlorate of morphine, and one-twelfth of a grain of ipecacuanha.

Dose.—1 to 6 lozenges.

TROCHISCI OPII.

Opium Lozenges.

Take of

Extract of Opium	72 grains
Tincture of Tolu	½ fluid ounce
Refined Sugar, in powder . . .	16 ounces
Gum Acacia, in powder . . .	2 ounces
Extract of Liquorice	6 ounces
Distilled Water	a sufficiency

Add the extract of opium, first softened by means of a little water, and the tincture of tolu, to the extract of liquorice heated in a water-bath. When the mixture is reduced to a proper consistence, remove it to a slab, add the sugar and gum previously rubbed together, and mix thoroughly. Divide the mass into 720 lozenges, and dry these in a hot-air chamber at a moderate temperature.

Each lozenge contains one-tenth of a grain of extract of opium, or one-fiftieth of a grain of morphine.

Dose.—1 to 6 lozenges.

TROCHISCI POTASSII CHLORATIS.

Chlorate of Potassium Lozenges.

Take of

Chlorate of Potassium, in powder .	3600 grains
Refined Sugar, in powder . . .	25 ounces
Gum Acacia, in powder . . .	1 ounce
Mucilage of Gum Acacia . . .	2 fluid ounces
Distilled Water	1 fluid ounce, or a sufficiency

Mix the powders and add the mucilage and water to form a proper mass. Divide into 720 lozenges, and dry these in a hot-air chamber at a moderate temperature.

Each lozenge contains five grains of chlorate of potassium.

Dose.—1 to 6 lozenges.

TROCHISCI SANTONINI.

Santonin Lozenges.

Take of

Santonin	720 grains
Refined Sugar, in powder	25 ounces
Gum Acacia, in powder	1 ounce
Mucilage of Gum Acacia	2 fluid ounces
Distilled Water	a sufficiency

Mix the santonin, sugar, and gum; add the mucilage and water to form a proper mass. Divide into 720 lozenges, and dry these in a hot-air chamber at a moderate temperature.

Each lozenge contains one grain of santonin.

Dose.—1 to 6 lozenges.

TROCHISCI SODII BICARBONATIS.

Bicarbonate of Sodium Lozenges.

Take of

Bicarbonate of Sodium, in powder	3600 grains
Refined Sugar, in powder	25 ounces
Gum Acacia, in powder	1 ounce
Mucilage of Gum Acacia	2 fluid ounces
Distilled Water	1 fluid ounce

Mix the powders, and add the mucilage and water to form a proper mass. Divide into 720 lozenges, and dry these in a hot-air chamber at a moderate temperature.

Each lozenge contains five grains of bicarbonate of sodium.

Dose.—1 to 6 lozenges.

UNGUENTUM ACIDI BORICI.

Ointment of Boric Acid.

Synonym.—Ointment of Boracic Acid.

Take of

Boric Acid, in fine powder	2½ ounces	or	1 part
Soft Paraffin	10 ounces	,,	4 parts
Hard Paraffin	5 ounces	,,	2 parts

Melt the hard and soft paraffins together, and add the boric acid distributed over the surface of the liquid by passing it through a sieve, then stir them together constantly until cold.

UNGUENTUM ACIDI CARBOLICI.

Ointment of Carbolic Acid.

Take of

Carbolic Acid	60 grains	or	1 part
Soft Paraffin	720 grains	,,	12 parts
Hard Paraffin	360 grains	,,	6 parts

Melt, and stir together constantly until cold.

UNGUENTUM ACIDI SALICYLICI.

Ointment of Salicylic Acid.

Take of

Salicylic Acid	60 grains	or	1 part
Soft Paraffin	1080 grains	,,	18 parts
Hard Paraffin	540 grains	,,	9 parts

Melt the hard and soft paraffins together, add the salicylic acid, and stir the whole constantly until cold.

UNGUENTUM ACONITINÆ.

Ointment of Aconitine.

Take of

Aconitine	8 grains	or	1 part
Rectified Spirit	½ fluid drachm	,,	8½ fluid parts
Benzoated Lard	1 ounce	,,	55 parts

Dissolve the aconitine in the spirit, add the lard, and mix thoroughly.

UNGUENTUM ANTIMONII TARTARATI.

Ointment of Tartarated Antimony.

Take of

Tartarated Antimony, in fine powder	¼ ounce	or	1 part
Simple Ointment	1 ounce	,,	4 parts

Mix thoroughly.

UNGUENTUM ATROPINÆ.

Ointment of Atropine.

Take of

Atropine	8 grains	or	1 part
Rectified Spirit	½ fluid drachm	,,	8½ fluid parts
Benzoated Lard	1 ounce	,,	55 parts

Dissolve the atropine in the spirit, add the lard, and mix thoroughly.

UNGUENTUM BELLADONNÆ.

Ointment of Belladonna.

Take of

Alcoholic Extract of Belladonna	50 grains	or	1 part
Benzoated Lard	1 ounce	,,	9 parts

Mix thoroughly.

UNGUENTUM CALAMINÆ.

Ointment of Calamine.

Take of

Prepared Calamine	1 ounce	or	1 part
Benzoated Lard	5 ounces	,,	5 parts

Mix thoroughly.

UNGUENTUM CANTHARIDIS.

Ointment of Cantharides.

Take of

Cantharides Yellow Wax	of each	1 ounce	or	1 part
Olive Oil		6 fluid ounces	,,	6 fluid parts

Infuse the cantharides in the oil, in a covered vessel, for twelve hours, then place the vessel in boiling water for fifteen minutes, strain through muslin with strong pressure, add the product to the wax previously melted, and stir constantly while the mixture cools.

UNGUENTUM CETACEI.

Ointment of Spermaceti.

Take of

Spermaceti	5 ounces	or	10 parts
White Wax	2 ounces	,,	4 parts
Almond Oil	1 pint	,,	40 fluid parts
Benzoin, in coarse powder	½ ounce	,,	1 part

Melt together the spermaceti, wax, and almond oil; add the benzoin, and, frequently stirring the mixture, continue the application of heat for two hours; remove from the source of heat, take out the residual benzoin by straining, and stir constantly until quite cold.

UNGUENTUM CHRYSAROBINI.

Ointment of Chrysarobin.

Take of

Chrysarobin	20 grains	or	1 part
Benzoated Lard	480 grains	,,	24 parts

Melt the lard, add the chrysarobin, and stir them together, maintaining a moderate temperature, so as to promote solution; then remove the heat, and stir until cold.

UNGUENTUM CREASOTI.

Ointment of Creasote.

Take of

Creasote	1 fluid drachm	or	1 fluid part
Simple Ointment	1 ounce	,,	8 parts

Mix thoroughly.

UNGUENTUM ELEMI.

Ointment of Elemi.

Take of

Elemi	¼ ounce	or	1 part
Simple Ointment	1 ounce	,,	4 parts

Melt, strain through flannel, and stir constantly until the ointment solidifies.

UNGUENTUM EUCALYPTI.

Ointment of Eucalyptus.

Take of

Oil of Eucalyptus, by weight	1 ounce	or	1 part
Soft Paraffin Hard Paraffin } of each	2 ounces	,,	2 parts

Melt the hard and soft paraffins together, add the oil, and stir until cold.

UNGUENTUM GALLÆ.

Ointment of Galls.

Take of

Galls, in fine powder	80 grains	or	1 part
Benzoated Lard	1 ounce	,,	5·5 parts

Mix thoroughly.

Preparation.—Unguentum Gallæ cum Opio.

UNGUENTUM GALLÆ CUM OPIO.

Ointment of Galls and Opium.

Take of

Ointment of Galls	1 ounce	or	13·6 parts
Opium, in powder	32 grains	,,	1 part

Mix thoroughly.

UNGUENTUM GLYCERINI PLUMBI SUBACETATIS.

Ointment of Glycerine of Subacetate of Lead.

Take of

Glycerine of Subacetate of Lead	4½ ounces	or	1 part
Soft Paraffin	18 ounces	,,	4 parts
Hard Paraffin	6 ounces	,,	1⅓ parts

Melt the hard and soft paraffins together; then add the glycerine of subacetate of lead, and stir until the mixture has cooled.

UNGUENTUM HYDRARGYRI.

Ointment of Mercury.

Take of

Mercury Prepared Lard } of each	1 pound	or	16 parts
Prepared Suet	1 ounce	,,	1 part

Rub them together until metallic globules cease to be visible.

Preparations.

Linimentum Hydrargyri | Suppositoria Hydrargyri
Unguentum Hydrargyri Compositum

UNGUENTUM HYDRARGYRI AMMONIATI.

Ointment of Ammoniated Mercury.[1]

Synonym.—Ointment of White Precipitate.

Take of

Ammoniated Mercury . .	50 grains . . or . .	1 part
Simple Ointment . . .	450 grains . . ,, . .	9 parts

Mix thoroughly.

UNGUENTUM HYDRARGYRI COMPOSITUM.

Compound Ointment of Mercury.

Take of

Ointment of Mercury . .	6 ounces . . or . .	6 parts
Yellow Wax Olive Oil } of each . .	3 ounces . . ,, . .	3 parts
Camphor	1½ ounce . . ,, . .	1½ part

Mix the wax and oil by the aid of heat, then incorporate the ointment of mercury, and, when the mixture is nearly cold, add the camphor in powder; stir the whole thoroughly together.

UNGUENTUM HYDRARGYRI IODIDI RUBRI.

Ointment of Red Iodide of Mercury.

Take of

Red Iodide of Mercury, in fine powder . . .	16 grains . . or . .	1 part
Simple Ointment . .	1 ounce . . . ,, . .	27·3 parts

Mix thoroughly.

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[1] The strength is 10 per cent. It was about 15 per cent. in B. P. 1867.

UNGUENTUM HYDRARGYRI NITRATIS.

Ointment of Nitrate of Mercury.

Synonym.—Unguentum Citrinum.

Take of

Mercury, by weight	4 ounces	or	1 part
Nitric Acid	12 fluid ounces	,,	3 fluid parts
Prepared Lard	15 ounces	,,	3¾ parts
Olive Oil	32 fluid ounces	,,	8 fluid parts

Dissolve the mercury in the nitric acid with the aid of a little heat; melt the lard in the oil, by a steam or water bath, in a porcelain vessel capable of holding six times the quantity; and, while the mixture is at about 212° F. (100° C.), add the solution of mercury, also at about the same temperature, mixing them thoroughly. If the mixture do not froth up, increase the heat till this occurs. Keep it stirred until it is cold.

Preparation.—Unguentum Hydrargyri Nitratis Dilutum.

UNGUENTUM HYDRARGYRI NITRATIS DILUTUM.

Diluted Ointment of Nitrate of Mercury.

Take of

Nitrate of Mercury Ointment	1 ounce	or	1 part
Soft Paraffin	2 ounces	,,	2 parts

Mix.

UNGUENTUM HYDRARGYRI OXIDI RUBRI.

Ointment of Red Oxide of Mercury.

Take of

Red Oxide of Mercury, in very fine powder	62 grains	or	1 part
Hard Paraffin	¼ ounce	,,	1·76 part
Soft Paraffin	¾ ounce	,,	5·3 parts

Melt the hard and soft paraffins together, and when the mixture in cooling begins to thicken add the oxide of mercury in a glass or porcelain mortar, and mix the whole thoroughly.

UNGUENTUM HYDRARGYRI SUBCHLORIDI.

Ointment of Subchloride of Mercury.

Take of

Subchloride of Mercury	80 grains	or	1 part
Benzoated Lard	1 ounce	,,	5·47 parts

Mix thoroughly.

UNGUENTUM IODI.

Ointment of Iodine.

Take of

Iodine	32 grains	or	7 parts
Iodide of Potassium	32 grains	,,	7 parts
Glycerine	1 fluid drachm	,,	12 fluid parts
Prepared Lard	2 ounces	,,	19 parts

Rub the iodine and the iodide of potassium well together, with the glycerine, in a glass or porcelain mortar, add the lard gradually, and mix thoroughly.

UNGUENTUM IODOFORMI.

Ointment of Iodoform.

Take of

Iodoform	1 ounce	or	1 part
Benzoated Lard	9 ounces	,,	9 parts

Melt the lard at a low temperature, add the iodoform, and stir together until dissolved and finally cooled.

UNGUENTUM PICIS LIQUIDÆ.

Ointment of Tar.

Take of

Tar	5 ounces	or	2½ parts
Yellow Wax	2 ounces	,,	1 part

Melt the wax at a low temperature, add the tar, and stir the mixture briskly while it cools.

UNGUENTUM PLUMBI ACETATIS.

Ointment of Acetate of Lead.

Take of

Acetate of Lead, in fine powder	12 grains	or	2 parts
Benzoated Lard	1 ounce	,,	73 parts

Mix thoroughly.

UNGUENTUM PLUMBI CARBONATIS.

Ointment of Carbonate of Lead.

Take of

Carbonate of Lead, in fine powder	62 grains	or	1 part
Simple Ointment	1 ounce	,,	7 parts

Mix thoroughly.

UNGUENTUM PLUMBI IODIDI.

Ointment of Iodide of Lead.

Take of

Iodide of Lead, in fine powder	62 grains	or	1 part
Simple Ointment	1 ounce	,,	7 parts

Mix thoroughly.

UNGUENTUM POTASSÆ SULPHURATÆ.

Ointment of Sulphurated Potash.

Take of

Sulphurated Potash	30 grains	or	5 parts
Hard Paraffin	¼ ounce	,,	18 parts
Soft Paraffin	¾ ounce	,,	55 parts

Triturate the sulphurated potash in a glass or porcelain mortar and gradually add the melted mixture of the hard and soft paraffins, rubbing them together until the ointment is perfectly smooth and free from grittiness.

This ointment should be recently prepared.

UNGUENTUM POTASSII IODIDI.

Ointment of Iodide of Potassium.

Take of

Iodide of Potassium	64 grains	or	16 parts
Carbonate of Potassium	4 grains	,,	1 part
Water	1 fluid drachm	,,	14 fluid parts
Benzoated Lard	1 ounce	,,	110 parts

Dissolve the iodide of potassium and carbonate of potassium in the water, and mix thoroughly with the lard.

UNGUENTUM RESINÆ.

Ointment of Resin.

Take of

Resin, in coarse powder	8 ounces	or	4 parts
Yellow Wax	4 ounces	,,	2 parts
Simple Ointment	16 ounces	,,	8 parts
Almond Oil	2 fl. ounces	,,	1 fl. part

Melt at a low temperature, strain the mixture, while hot, through flannel, and stir constantly while it cools.

UNGUENTUM SABINÆ.

Ointment of Savin.

Take of

Fresh Savin Tops, bruised.	8 ounces	or	4 parts
Yellow Wax . . .	3 ounces	„	1½ part
Benzoated Lard . .	16 ounces	„	8 parts

Melt the lard and the wax together on a water-bath, add the savin, and digest for twenty minutes. Then remove the mixture, and express through calico.

UNGUENTUM SIMPLEX.

Simple Ointment.

Take of

White Wax . . .	2 ounces	or	1 part
Benzoated Lard . .	3 ounces	„	1½ part
Almond Oil . . .	3 fluid ounces	„	1½ fl. part

Melt the wax and lard in the oil on a water-bath; then remove the mixture, and stir constantly while it cools.

Preparations.

Unguentum Antimonii Tartarati
„ Creasoti
„ Elemi
„ Hydrargyri Ammoniati
„ „ Iodidi Rubri
„ Plumbi Carbonatis
„ „ Iodidi
„ Resinæ

UNGUENTUM STAPHISAGRIÆ.

Ointment of Stavesacre.

Take of

Stavesacre Seeds . .	4 ounces	or	1 part
Benzoated Lard. . .	8 ounces	„	2 parts

Crush the seeds and macerate them in the lard kept melted over a water-bath for two hours. Strain through calico, and set aside to cool.

This ointment contains about ten per cent. of oil of stavesacre.

UNGUENTUM SULPHURIS.

Ointment of Sulphur.

Take of

Sublimed Sulphur	1 ounce	or	1 part
Benzoated Lard	4 ounces	,,	4 parts

Mix thoroughly.

UNGUENTUM SULPHURIS IODIDI.

Ointment of Iodide of Sulphur.

Take of

Iodide of Sulphur	30 grains	or	5 parts
Hard Paraffin	¼ ounce	,,	18 parts
Soft Paraffin	¾ ounce	,,	55 parts

Triturate the iodide of sulphur in a glass or porcelain mortar, and gradually add the melted mixture of the hard and soft paraffins, rubbing them together until the ointment is perfectly cold and free from grittiness.

UNGUENTUM TEREBINTHINÆ.

Ointment of Turpentine.

Take of

Oil of Turpentine	1 fluid ounce	or	8 fluid parts
Resin, in coarse powder	54 grains	,,	1 part
Yellow Wax	½ ounce	,,	4 parts
Prepared Lard	½ ounce	,,	4 parts

Melt the ingredients together by the heat of a steam- or water-bath. Remove the vessel, and stir the mixture constantly while it cools.

UNGUENTUM VERATRINÆ.

Ointment of Veratrine.

Take of

Veratrine	8 grains	or	1 part
Hard Paraffin	¼ ounce	,,	14 parts
Soft Paraffin	¾ ounce	,,	41 parts
Olive Oil	1 fluid drachm	,,	7 parts

Rub the veratrine and the oil together; melt the hard and soft paraffins, and when in cooling they begin to thicken, mix the whole thoroughly in a mortar until cold.

UNGUENTUM ZINCI.

Ointment of Zinc.

Take of

Oxide of Zinc	80 grains	or	2 parts
Benzoated Lard	1 ounce	,,	11 parts

Add the oxide of zinc to the benzoated lard, previously melted at a low temperature, and stir the mixture constantly while it cools.

UNGUENTUM ZINCI OLEATI.

Ointment of Oleate of Zinc.

Take of

Oleate of Zinc	1 ounce	or	1 part
Soft Paraffin	1 ounce	,,	1 part

Mix by aid of a little heat, and stir until nearly cold.

UVÆ.

Raisins.

Synonym.—Uvæ Passæ.

The ripe fruit of Vitis vinifera, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. i. plate 66. Dried by the heat of the sun; or partly by the sun's heat and partly by artificial heat. Imported from Spain.

Characters.—More or less shrivelled, compressed, smooth, free from sugary or saline incrustation; agreeably fragrant, and with a soft very sweet pulp.

Preparations.

Tinctura Cardamomi Composita | Tinctura Sennæ

UVÆ URSI FOLIA.

Bearberry Leaves.

The dried leaves of Arctostaphylos Uva-ursi, *Spreng.*; *Bentl. and Trim. Med. Pl.* vol. iii. plate 163. From indigenous plants.

Characters and Test.—Very shortly stalked. Obovate or spathulate, coriaceous, from half an inch to about three-fourths of an inch long, smooth and shining on the upper surface, paler coloured and minutely reticulated beneath; margins entire and slightly revolute. Odour faintly tea-like when powdered; taste very astringent. The infusion gives a bluish-black precipitate with perchloride of iron.

Preparation.—Infusum Uvæ Ursi, 1 ounce to 1 pint.

VALERIANÆ RHIZOMA.

Valerian Rhizome.

Synonym.—**Valerianæ Radix.**

The dried rhizome and rootlets of Valeriana officinalis, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 146. Collected in autumn from plants growing wild or cultivated in Britain.

Characters and Test.—A short erect rhizome, entire or sliced, dark yellowish-brown externally, and giving off numerous slender brittle shrivelled rootlets three or four inches long, of the same colour as the rhizome; rhizome and rootlets whitish internally. Odour developed in the process of drying, strong, peculiar, and disagreeable; taste unpleasant, camphoraceous and slightly bitter. Yields volatile oil and valerianic acid when distilled with water.

Dose, in powder.—10 to 30 grains.

Preparations.

Infusum Valerianæ . . .	220 grains to 1 pint
Tinctura Valerianæ . . .	2½ ounces to 1 pint
,, ,, Ammoniata	2½ ounces to 1 pint

VAPOR ACIDI HYDROCYANICI.

Inhalation of Hydrocyanic Acid.

Take of

Diluted Hydrocyanic Acid . .	10 to 15 minims
Water (cold)	1 fluid drachm

Mix in a suitable apparatus, and let the vapour that arises be inhaled.

VAPOR CHLORI.

Inhalation of Chlorine.

Take of

Chlorinated Lime	2 ounces
Water (cold)	a sufficiency

Put the powder into a suitable apparatus, moisten it with the water, and let the vapour that arises be inhaled.

VAPOR CONINÆ.

Inhalation of Conine.

Take of

Juice of Hemlock . . .	½ fluid ounce
Solution of Potash . . .	1 fluid drachm
Distilled Water	1 fluid ounce

Mix. Put twenty minims of the mixture on a sponge, in a suitable apparatus, so that the vapour of hot water passing over it may be inhaled.

VAPOR CREASOTI.

Inhalation of Creasote.

Take of

Creasote	12 minims
Boiling Water	8 fluid ounces

Mix the creasote and water in an apparatus so arranged that air may be made to pass through the solution, and may afterwards be inhaled.

VAPOR IODI.

Inhalation of Iodine.

Take of

Tincture of Iodine . . .	1 fluid drachm
Water	1 fluid ounce

Mix in a suitable apparatus which can be gently heated, and let the vapour that arises be inhaled.

VAPOR OLEI PINI SYLVESTRIS.

Inhalation of Fir-wool Oil.

Take of

Fir-wool Oil	40 minims
Light Carbonate of Magnesium .	20 grains
Water	a sufficiency

Rub the fir-wool oil with the carbonate of magnesium, and gradually add sufficient water to produce one fluid ounce.

Put one fluid drachm of this mixture with half a pint of cold water and half a pint of boiling water into an apparatus so arranged that air may be made to pass through the solution and may afterwards be inhaled.

VERATRI VIRIDIS RHIZOMA.

Green Hellebore Rhizome.

Synonym.—**Veratri Viridis Radix.**

The dried rhizome and rootlets of Veratrum viride, *Soland.*; *Bentl. and Trim. Med. Pl.* vol. iv. plate 286.

Characters.—Entire, or transversely or longitudinally sliced or divided, and either with or without attached rootlets. When entire from one to two inches or more in length, and three-quarters of an inch or more in diameter, erect, obconical, obtuse or truncated at the apex, dark brown externally, whitish within. Frequently bearing at its upper end the concentrically arranged remains of leaves, and giving off on all sides numerous much-shrivelled yellowish-white rootlets several inches long; or the latter are detached and mixed with it, in which case the rhizome is marked with corresponding scars. Inodorous, but exciting sneezing when powdered; taste bitterish and very acrid.

Preparation.—Tinctura Veratri Viridis, 4 ounces to 1 pint.

VERATRINA.

Veratrine.

Synonym.—Veratria.

An alkaloid or mixture of alkaloids obtained from Cevadilla; not quite pure. It may be obtained by the following process:—

Take of

Cevadilla		2 pounds
Distilled Water	of each	a sufficiency
Rectified Spirit		
Solution of Ammonia		
Hydrochloric Acid		
Purified Animal Charcoal		60 grains

Macerate the cevadilla with half its weight of boiling distilled water in a covered vessel for twenty-four hours. Remove the cevadilla, squeeze it, and dry it thoroughly in a warm place. Beat it now in a mortar, and separate the seeds from the capsules by brisk agitation in a deep narrow vessel, or by winnowing it gently on a table with a sheet of paper. Grind the seeds in a coffee-mill, and form them into a thick paste with rectified spirit. Pack this firmly in a percolator, and pass rectified spirit through it till the spirit ceases to be coloured. Concentrate the spirituous solution by distillation, so long as no deposit forms, and pour the residue, while hot, into twelve times its volume of cold distilled water. Filter through calico, and wash the residue on the filter with distilled water, till the fluid ceases to precipitate with ammonia. To the united filtered liquids add the ammonia in slight excess, let the precipitate completely subside, pour off the supernatant fluid, collect the precipitate on a filter, and wash it with distilled water till the fluid passes colourless. Diffuse the moist precipitate through twelve fluid ounces of distilled water, and add gradually with diligent stirring sufficient hydrochloric acid to make the fluid feebly but persistently acid. Then add the animal charcoal, digest with a little heat for twenty minutes, filter, and allow the liquid to cool. Add ammonia in slight excess, and, when the precipitate has completely subsided, pour off the supernatant liquid, collect the precipitate on a filter, and wash it with cold distilled water till the washings cease to be affected by nitrate of silver acidulated with nitric acid. Lastly, dry the precipitate, first by imbibition, with filtering paper, and then by the application of warmth.

Characters and Tests.—Pale grey, amorphous, without smell, but, even in the most minute quantity, powerfully irritating the nostrils; strongly and persistently bitter, and highly acrid; insoluble in water, soluble in spirit, in ether, and in diluted acids, leaving traces of an insoluble brown resinoid matter. It dissolves in nitric acid, yielding a yellow solution, and in sulphuric acid forming a deep red solution which exhibits a green fluorescence by reflected light. Warmed with hydrochloric acid, it dissolves with production of a blood-red colour. Heated with access of air, it melts into a yellow liquid, and at length burns away, leaving no residue. It is an active poison.

Preparation.—Unguentum Veratrinæ, 8 grains to 1 ounce.

VINUM ALOES.

Wine of Aloes.

Take of

Socotrine Aloes	1½ ounce
Cardamom Seeds, bruised	80 grains
Ginger, in coarse powder	80 grains
Sherry	2 pints

Macerate for seven days in a closed vessel, with occasional agitation; filter the liquor, and add sufficient sherry to make two pints.

Dose.—1 to 2 fluid drachms.

VINUM ANTIMONIALE.

Antimonial Wine.

Take of

Tartarated Antimony	40 grains	or	1 part
Sherry	1 pint	,,	219 fluid parts

Dissolve, and filter if necessary.

Dose.—5 minims to 1 fluid drachm.

VINUM AURANTII.

Orange Wine.

Wine made in Britain, by the fermentation of a saccharine solution to which the fresh peel of the bitter orange has been added.

Characters and Tests.—A vinous liquid, having a golden sherry colour, and a taste and aroma derived from the bitter-orange peel. It contains 10 to 12 per cent. of alcohol, and is but slightly acid to test-paper.

Preparations.

Vinum Ferri Citratis
Vinum Quininæ

VINUM COLCHICI.

Wine of Colchicum.

Take of

Colchicum Corm, sliced, dried, and reduced to No. 20 powder . . .	4 ounces
Sherry	1 pint

Macerate the colchicum in the wine for seven days in a closed vessel, with occasional agitation, press and strain through calico; then add sufficient sherry to make one pint.

Dose.—10 to 30 minims.

VINUM FERRI.

Wine of Iron.

Take of

Iron Wire . . .	1 ounce . . or	. . 1 part
Sherry . . .	1 pint . . . „	. . 20 fluid parts

Macerate for thirty days in a closed vessel, the iron being almost, but not quite, wholly immersed in the wine, and the vessel frequently shaken, and the stopper removed; then filter.

Dose.—1 to 4 fluid drachms.

VINUM FERRI CITRATIS.

Wine of Citrate of Iron.

Take of

Citrate of Iron and Ammonium .	160 grains . . or	. . 1 part
Orange Wine .	1 pint . . . . . „	. . 55 fl. parts nearly

Dissolve, and let the solution remain for three days in a closed vessel, shaking it occasionally; afterwards filter.

Dose.—1 to 4 fluid drachms.

VINUM IPECACUANHÆ.

Wine of Ipecacuanha.

Take of

Ipecacuanha, coarsely powdered	1 ounce
Acetic Acid	1 fluid ounce
Distilled Water	a sufficiency
Sherry	1 pint

Macerate the ipecacuanha in the acetic acid for twenty-four hours. Transfer to a percolator, and pass sufficient distilled water through to produce one pint of liquor. Evaporate the product to dryness over a water-bath. Powder the residue and macerate it in the sherry for forty-eight hours, with occasional agitation, and filter.

Dose.—5 to 40 minims as an expectorant; 3 to 6 fluid drachms as an emetic.

VINUM OPII.

Wine of Opium.

Take of

Extract of Opium	1 ounce	or	1 part
Cinnamon Bark, bruised	75 grains	,,	$\frac{1}{6}$ part
Cloves, bruised	75 grains	,,	$\frac{1}{6}$ part
Sherry	1 pint	,,	20 fluid parts

Macerate for seven days in a closed vessel, with occasional agitation, and filter.

It contains 22 grains of extract of opium, nearly, in 1 fluid ounce. Each fluid drachm contains about half a grain of morphine.

Dose.—10 to 40 minims.

VINUM QUININÆ.

Wine of Quinine.

Take of

Sulphate of Quinine	20 grains	or	1 part
Citric Acid	30 grains	,,	$1\frac{1}{2}$ part
Orange Wine	1 pint	,,	438 fluid parts

Dissolve, first the citric acid, and then the sulphate of quinine, in the wine; allow the solution to remain for three days in a closed vessel, shaking it occasionally; and afterwards filter.

Each fluid ounce contains one grain of sulphate of quinine.

Dose.—½ to 1 fluid ounce.

VINUM RHEI.

Wine of Rhubarb.

Take of

Rhubarb Root, in coarse powder . .	1½ ounce
Canella Bark, in coarse powder . .	60 grains
Sherry	1 pint

Macerate for seven days in a closed vessel, with occasional agitation; then strain, press, filter, and add sufficient sherry to make one pint.

Dose.—1 to 2 fluid drachms.

VINUM XERICUM.

Sherry.

A Spanish wine.

Characters.—Pale yellowish-brown, containing about seventeen per cent. of alcohol.

Preparations.

Vinum Aloes
,, Antimoniale
,, Colchici
Vinum Ferri
,, Ipecacuanhæ
,, Opii
Vinum Rhei

ZINCI ACETAS.

Acetate of Zinc.

$Zn(C_2H_3O_2)_2 2H_2O$.

Take of

Carbonate of Zinc	2 ounces
Acetic Acid	5 fluid ounces, or a sufficiency
Distilled Water	6 fluid ounces

Add the carbonate of zinc in successive portions to three ounces of the acetic acid previously mixed with the water in a flask; heat gently, add by degrees the remainder of the acid till the carbonate is dissolved; boil for a few minutes, filter while hot, and set it aside for two days to crystallise. Decant the mother liquor; evaporate to one half, and again set it aside for two days to crystallise. Place the crystals in a funnel to drain, then spread them on filtering paper on a porous tile, and dry them by exposure to the air at ordinary temperatures.

Characters and Tests.—Thin translucent and colourless crystalline plates, of a pearly lustre, with a sharp unpleasant taste; evolving acetic acid when decomposed by sulphuric acid; soluble in water, and the solution precipitated pure white by sulphuretted hydrogen. A dilute watery solution is not affected by chloride of barium or nitrate of silver, and, when slightly acidulated with hydrochloric acid, is not precipitated by sulphuretted hydrogen; after it has been boiled for a few minutes with a little nitric acid, it yields with ammonia a white precipitate entirely soluble without colour in an excess of the reagent.

Dose.—1 to 2 grains, as a tonic; 10 to 20 grains, as an emetic.

ZINCI CARBONAS.

Carbonate of Zinc.

$ZnCO_3(Zn2HO)_2,H_2O$.

Take of

Sulphate of Zinc	10 ounces
Carbonate of Sodium	10½ ounces
Boiling Distilled Water . . .	a sufficiency

Dissolve the carbonate of sodium in a pint of the water in a capacious porcelain vessel, and pour into it a solution of the sulphate of zinc in a pint of the water, stirring diligently. Boil for fifteen minutes after effervescence has ceased; and let the precipitate subside. Decant the supernatant liquor, pour on the precipitate three pints of boiling distilled water, agitating briskly ; let the precipitate again subside, and repeat the processes of affusion of hot distilled water and subsidence, till the washings are no longer precipitated by chloride of barium. Collect the precipitate on calico, let it drain, and dry it at a moderate temperature.

Characters and Tests.—White, tasteless, inodorous, insoluble in water ; soluble, with effervescence and without residue, in diluted nitric acid. This solution is not affected by chloride of barium or nitrate of silver, and gives with carbonate of ammonium a white precipitate entirely soluble without colour in an excess of the reagent, forming a solution which is precipitated white by sulphydrate of ammonium.

Preparations in which Carbonate of Zinc is used.

Zinci Acetas
,, Chloridum
Zinci Oxidum
,, Sulphas

ZINCI CHLORIDUM.

Chloride of Zinc.

$ZnCl_2$.

Take of

Granulated Zinc	1 pound
Hydrochloric Acid	44 fluid ounces
Solution of Chlorine	a sufficiency
Carbonate of Zinc	½ ounce, or a sufficiency
Distilled Water	1 pint

Put the zinc into a porcelain basin, add by degrees the hydrochloric acid previously mixed with the water, and aid the action by gently warming on a sand-bath until gas is no longer evolved. Boil for half an hour, supplying the water lost by evaporation, and allow it to stand on a cool part of a sand-bath for twenty-four hours, stirring frequently.

Test a few drops of the resulting liquid for iron or lead by adding excess of ammonia and then sulphydrate of ammonium, when a black precipitate will be produced if iron or lead be present.

In the latter case, filter the remainder of the product into a gallon bottle, and pour in the solution of chlorine by degrees, with frequent agitation, until the fluid acquires a permanent odour of chlorine. Add the carbonate of zinc, in small quantities at a time, and with renewed agitation, until a brown sediment appears, and the whole of the iron or lead is thus precipitated. Filter through paper into a porcelain basin, and evaporate until a portion of the liquid, withdrawn on the end of a glass rod and cooled, forms an opaque white solid. Pour it out now into proper moulds, and when the salt has solidified, but before it has cooled, place it in closely stoppered bottles.

If no iron or lead be present, filter and evaporate, etc., at once.

Characters and Tests.—Colourless opaque rods or tablets, very deliquescent and caustic; soluble almost entirely in water, alcohol, or ether. The aqueous solution is precipitated white by sulphydrate of ammonium and by nitrate of silver; but, if first acidulated with hydrochloric acid, it is not affected by sulphuretted hydrogen. The solution is not affected by chloride of barium or oxalate of ammonium, and is not tinged blue by ferrocyanide or ferricyanide of potassium. Ammonia throws down a white precipitate entirely soluble in an excess of the reagent.

Preparation containing Chloride of Zinc.

Liquor Zinci Chloridi .	366 grains in 1 fluid ounce

ZINCI OXIDUM.

Oxide of Zinc.

ZnO.

It may be made as follows:—

Take of

Carbonate of Zinc	6 ounces

Place the carbonate of zinc in a loosely covered Hessian crucible, and expose it to a dull red heat, until a portion, taken from the centre of the contents of the crucible and cooled, no longer effervesces when moistened with water and dropped into diluted sulphuric acid. Let the crucible cool, and transfer the product to stoppered bottles.

Characters and Tests.—A soft nearly white tasteless and inodorous powder, becoming pale yellow when heated. Dissolves without effervescence in diluted nitric acid, forming a solution which is not affected by chloride of barium, nitrate of silver, or diluted sulphuric acid, and gives with carbonate of ammonium a white precipitate which dissolves entirely without colour in an excess of the reagent, forming a solution which is precipitated white by sulphydrate of ammonium.

Oxide of zinc may also be obtained from metallic zinc by combustion. Thus prepared it is white.

Dose.—2 to 10 grains.

Preparation. –Unguentum Zinci, 1 part in 6½, nearly.

ZINCI SULPHAS.

Sulphate of Zinc.

$ZnSO_4,7H_2O$.

Take of

Granulated Zinc	16 ounces
Sulphuric Acid	12 fluid ounces
Distilled Water	4 pints
Solution of Chlorine	a sufficiency
Carbonate of Zinc	½ ounce, or a sufficiency

Pour the sulphuric acid previously mixed with the water on the zinc contained in a porcelain basin, and, when effervescence has nearly ceased, aid the action by heat.

Test a few drops of the resulting liquid for iron by adding excess of ammonia and then sulphydrate of ammonium, when a black precipitate will be produced if iron be present.

In the latter case filter the remainder of the fluid into a gallon bottle, and add gradually with constant agitation the solution of chlorine until the fluid acquires a permanent odour of chlorine. Add now with continued agitation the carbonate of zinc until a brown precipitate appears and the whole of the iron is thus precipitated. Let the precipitate subside, filter the solution; evaporate till a pellicle forms on the surface, and set aside to crystallise. Dry the crystals by exposure to the air on filtering paper placed on porous tiles. More crystals may be obtained by again evaporating the mother liquor.

If no iron be present, filter, and evaporate, etc., at once.

Characters and Tests.—In colourless transparent prismatic crystals with a strong metallic styptic taste. Its solution in water gives white precipitates with chloride of barium or sulphydrate of ammonium. Its aqueous solution is not tinged purple by tincture of galls; and when acidulated with sulphuric or hydrochloric acid gives no precipitate with sulphuretted hydrogen. After it has been boiled for a few minutes with a little nitric acid, it yields with ammonia a

white precipitate which is entirely soluble without colour in an excess of the reagent.

Dose.—1 to 3 grains, as a tonic; 10 to 30 grains, as an emetic.

Preparations.

Zinci Carbonas | Zinci Valerianas

ZINCI SULPHOCARBOLAS.

Sulphocarbolate of Zinc.

$Zn(C_6H_5SO_4)_2,H_2O.$

May be obtained by heating a mixture of carbolic acid and sulphuric acid, saturating the product with oxide of zinc, evaporating and crystallising.

Characters and Tests.—Colourless, transparent, tabular, efflorescent crystals; soluble in about twice their weight of rectified spirit or of water. The aqueous solution is coloured violet by perchloride of iron, and affords a white precipitate with sulphydrate of ammonium; it is not at once rendered turbid, or is only rendered faintly turbid, by chloride of barium, and is not precipitated by oxalate of ammonium.

ZINCI VALERIANAS.

Valerianate of Zinc.

$Zn(C_5H_9O_2)_2.$

It may be made as follows:—

Take of

Sulphate of Zinc	5½ ounces
Valerianate of Sodium	5 ounces
Distilled Water	a sufficiency

Dissolve the sulphate of zinc and the valerianate of sodium, each in two pints of the water; heat both solutions to near the boiling point; mix them, cool and skim off the crystals which are produced. Evaporate the mother liquor at a temperature not exceeding 200° F. (93°·3 C.), till it is reduced to four ounces; cool again, remove the crystals which have formed, and add them to those which already have been obtained. Drain the crystals on a paper filter, and wash them with a small quantity of cold distilled water, till the washings give but a very feeble precipitate with chloride of barium. Again drain, and dry on filtering paper at ordinary temperatures.

Valerianate of zinc may also be prepared by saturating valerianic acid with carbonate of zinc.

Characters and Tests.—In brilliant white pearly tabular crystals, with a feeble odour of valerianic acid, and a metallic taste; scarcely soluble in cold water or in ether, soluble in hot water and alcohol. Heated to redness in an open crucible, it leaves a residue which, when dissolved in diluted sulphuric acid, yields with ammonia a precipitate which entirely dissolves in an excess of the reagent, and the resulting solution gives a white precipitate with sulphydrate of ammonium. Its solution in hot water is only faintly precipitated by chloride of barium. It gives, when heated with diluted sulphuric acid, a distillate, which, when mixed with solution of acetate of copper, does not immediately affect the transparency of the fluid, but forms after a little time oily drops, which gradually pass into a bluish-white crystalline deposit.

Dose.—1 to 3 grains.

ZINCUM.

Zinc.

Zinc of commerce.

Preparations containing Zinc.

Liquor Zinci Chloridi
Oleatum Zinci
Unguentum Zinci
Oleati
Zinci Acetas
,, Carbonas

Zinci Chloridum
,, Oxidum
,, Sulphas
,, Sulphocarbolas
,, Valerianas
Zincum Granulatum

ZINCUM GRANULATUM.

Granulated Zinc.

Take of

Zinc of commerce . . . . . 1 pound

Heat it in an earthen crucible, and immediately the metal is fused remove the crucible from the fire and pour the fluid in a thin stream into a vessel containing about two gallons of cold water. Drain off the water and dry the granulated zinc.

Preparations.

Liquor Zinci Chloridi
Zinci Chloridum
Zinci Sulphas

ZINGIBER.

Ginger.

The scraped and dried rhizome of Zingiber officinale, *Roscoe*; *Bentl. and Trim. Med. Pl.* vol. iv. plate 270.

Characters.—In flattish irregularly branched pieces; varying in length, but commonly from about three to four inches, each branch marked at its summit by a depressed scar; externally pale buff and somewhat striated and fibrous; breaking readily with a mealy, short, but rather fibrous fracture. Odour agreeable, aromatic; taste strong, pungent.

Preparations.

Confectio Opii	1 part in 12, nearly
,, Scammonii . .	1 part in 6, nearly
Infusum Sennæ . . .	56 grains to 1 pint
Pilula Scillæ Composita . .	1 part in 6¼, nearly
Pulvis Cinnamomi Compositus .	1 part in 8
,, Jalapæ Compositus .	1 part in 15
,, Opii Compositus . .	1 part in 8
,, Rhei Compositus . .	1 part in 9
,, Scammonii Compositus .	1 part in 8
Syrupus Zingiberis	
Tinctura Zingiberis . . .	2½ ounces to 1 pint
,, ,, Fortior .	10 ounces to 1 pint
Vinum Aloes	40 grains to 1 pint

APPENDIX.

APPENDIX.

I.

ARTICLES EMPLOYED IN CHEMICAL TESTING.

ACETATE OF SODIUM.

$NaC_2H_3O_2,3H_2O$.

(Also employed in the preparation of Acetic Ether.)

BENZOL.

A colourless volatile liquid, obtained from coal tar, and consisting chiefly of benzol, C_6H_6. Specific gravity about 0·850.

BENZOLATED AMYLIC ALCOHOL.

Mix together three volumes of benzol and one of amylic alcohol. Decant the supernatant fluid from any deposited water.

CHLORIDE OF BARIUM.

$BaCl_2,2H_2O$.

COPPER FOIL.

Pure metallic Copper, thin and bright.

FERRICYANIDE OF POTASSIUM.

Synonym.—Red Prussiate of Potash.

$K_6Fe_2C_{12}N_{12}$.

Test.—Its aqueous solution gives no precipitate with a dilute solution of a pure ferric salt.

GOLD, FINE.

Gold, free from metallic impurities.

HYPOSULPHITE OF SODIUM.

Synonym.—Thiosulphate of Sodium.

$Na_2S_2O_3,5H_2O$.

Test.—24·8 grains decolorise 1000 grain-measures of the volumetric solution of iodine.

INDIGO.

C_8H_5NO.

A blue pigment prepared from various species of Indigofera, *Linn.*

ISINGLASS.

The swimming bladder or sound of various species of Acipenser, *Linn.*, prepared, and cut into fine shreds.

LITMUS.

A blue pigment prepared from various species of Roccella, *DC.*

LITMUS PAPER, BLUE.

Unsized white paper steeped in solution of litmus, and dried by exposure to the air.

LITMUS PAPER, RED.

Unsized white paper steeped in solution of litmus which has been previously reddened by the addition of a very minute quantity of acid, and dried by exposure to the air.

OXALIC ACID OF COMMERCE.

Oxalic acid ($H_2C_2O_4,2H_2O$), not quite pure.

OXALATE OF AMMONIUM.

$(NH_4)_2C_2O_4,H_2O$.

Take of

Oxalic Acid	1 ounce
Boiling Distilled Water . . .	8 fluid ounces
Carbonate of Ammonium . .	a sufficiency

Dissolve the oxalic acid in the water, neutralise the solution with the carbonate of ammonium at, finally, a boiling temperature; filter it while still hot, and set it by that crystals may form as it cools.

PETROLEUM SPIRIT.

Synonyms.—Benzoline; Petroleum Ether.

A colourless very volatile and highly inflammable liquid obtained from petroleum, and consisting of a mixture of the lower members of the paraffin or marsh-gas series of hydrocarbons. Boiling point 122° to 140° F. (50° to 60° C.). Specific gravity about 0·670 to 0·700.

PHENOL-PHTHALEIN.

Produced by reaction of phenol and phthalic anhydride. Its tincture yields an intense red colour with potash or soda, hence may be used as an indicator of the termination of volumetric reactions, especially those with organic acids.

PLATINUM BLACK.

Platinum in a state of minute division, obtained by adding excess of carbonate of sodium and some sugar to solution of perchloride of platinum, and boiling until a black precipitate is formed, which is washed and dried.

PLATINUM FOIL.

SUBACETATE OF COPPER OF COMMERCE.

Verdigris.

SULPHATE OF COPPER, ANHYDROUS.

$CuSO_4$.

Sulphate of copper deprived of its water by a temperature of 400° F. (204°·4 C.)

Characters.—A yellowish-white powder, which becomes blue when moistened with water.

SULPHIDE OF IRON.

FeS.

Prepared by combining its elements in proper proportions by the aid of heat. Small quantities may be produced by applying the end of a rod of iron, heated to whiteness at a blacksmith's forge, to the end of a roll of sulphur, and allowing the sulphide of iron as it is formed to run into a vessel of water.

SULPHURETTED HYDROGEN.

H_2S.

Take of

Sulphide of Iron	½ ounce
Water	4 fluid ounces
Sulphuric Acid	a sufficiency

Place the sulphide of iron and the water in a gas-bottle closed with a cork perforated by two holes, through one of which passes air-tight a funnel tube of sufficient length to dip into the water, and through the other a tube for giving exit to the gas. Through the former pour from time to time a little of the acid, so as to develope the sulphuretted hydrogen as it may be required.

When the gas is employed, either in chemical testing or in the preparation of Acidum Hydrobromicum Dilutum, it should be washed by passing it through a similarly fitted bottle containing water.

TIN, GRANULATED.

Grain tin, reduced to small fragments by fusing and, immediately the tin is melted, pouring it in a thin stream into cold water.

TURMERIC.

The dried rhizome of Curcuma longa, *Linn.*

TURMERIC PAPER.

Unsized white paper steeped in tincture of turmeric and dried by exposure to the air.

TURMERIC TINCTURE.

Take of

Turmeric, bruised	1 ounce
Rectified Spirit	6 fluid ounces

Macerate for seven days in a closed vessel, and filter.

II.

TEST SOLUTIONS.

SOLUTION OF ACETATE OF COPPER.

Take of

Subacetate of Copper of commerce, in fine powder	⅕ ounce
Acetic Acid	1 fluid ounce
Distilled Water	a sufficiency

Dilute the acid with half a fluid ounce of the water; digest the subacetate of copper in the mixture at a temperature not exceeding 212° F. (100° C.) with repeated stirring, and continue the heat until a dry residue is obtained. Digest this in four ounces of boiling distilled water, and by the addition of more of the water make up the solution to five fluid ounces. Filter it.

SOLUTION OF ACETATE OF POTASSIUM.

Take of

Acetate of Potassium	½ ounce
Distilled Water	5 fluid ounces

Dissolve and filter.

SOLUTION OF ACETATE OF SODIUM.

Take of

Acetate of Sodium	½ ounce
Distilled Water	5 fluid ounces

Dissolve and filter.

SOLUTION OF ALBUMEN.

Take of

The White of one Egg	
Distilled Water	4 fluid ounces

Mix by trituration in a mortar, and filter through clean tow first moistened with distilled water.

This solution must be recently prepared.

SOLUTION OF AMMONIO-NITRATE OF SILVER.

Take of

Nitrate of Silver, in crystals .	¼ ounce
Solution of Ammonia . . .	½ fluid ounce, or a sufficiency
Distilled Water	a sufficiency

Dissolve the nitrate of silver in eight fluid ounces of the water, and to the solution cautiously add the ammonia until the precipitate first formed is nearly dissolved. Clear the solution by filtration, and then add distilled water, so that the bulk may be ten fluid ounces.

SOLUTION OF AMMONIO-SULPHATE OF COPPER.

Take of

Sulphate of Copper, in crystals .	½ ounce
Solution of Ammonia . . .	a sufficiency
Distilled Water	a sufficiency

Dissolve the sulphate of copper in eight fluid ounces of the water, and to the solution cautiously add the ammonia until the precipitate first formed is nearly dissolved. Clear the solution by filtration, and then add distilled water, so that the bulk may be ten fluid ounces.

SOLUTION OF AMMONIO-SULPHATE OF MAGNESIUM.

Take of

Sulphate of Magnesium . . .	1 ounce
Chloride of Ammonium . . .	½ ounce
Solution of Ammonia . . .	½ fluid ounce
Distilled Water.	a sufficiency

Dissolve the sulphate of magnesium and chloride of ammonium in eight fluid ounces of the water, and to the solution add the ammonia, and as much distilled water as will make up the bulk to ten fluid ounces. Filter it.

SOLUTION OF BORIC ACID.

Take of

Boric Acid	50 grains
Rectified Spirit	1 fluid ounce

Dissolve and filter.

SOLUTION OF BROMINE.

Take of

Bromine	10 minims
Distilled Water	5 fluid ounces

Place the bromine in a bottle furnished with a well fitting stopper, pour on the water, and shake several times. Keep it excluded from the light.

SOLUTION OF CARBONATE OF AMMONIUM.

Take of

Carbonate of Ammonium, in small pieces	½ ounce
Solution of Ammonia	¾ fluid ounce
Distilled Water	10 fluid ounces

Dissolve and filter.

SOLUTION OF CHLORIDE OF AMMONIUM.

Take of

Chloride of Ammonium	1 ounce
Distilled Water	10 fluid ounces

Dissolve and filter.

SOLUTION OF CHLORIDE OF BARIUM.

Take of

Chloride of Barium, in crystals .	1 ounce
Distilled Water	10 fluid ounces

Dissolve and filter.

SOLUTION OF FERRICYANIDE OF POTASSIUM.

Take of

Ferricyanide of Potassium, in crystals	½ ounce
Distilled Water	5 fluid ounces

Dissolve and filter.

SOLUTION OF FERROCYANIDE OF POTASSIUM.

Take of

Ferrocyanide of Potassium, in crystals	¼ ounce
Distilled Water	5 fluid ounces

Dissolve and filter.

SOLUTION OF IODIDE OF POTASSIUM.

Take of

Iodide of Potassium . . .	1 ounce
Distilled Water	10 fluid ounces

Dissolve and filter.

SOLUTION OF ISINGLASS.

Take of

Isinglass, in shreds	50 grains
Warm Distilled Water . . .	5 fluid ounces

Mix, and digest for half an hour on a water-bath with repeated shaking, and filter through clean tow moistened with distilled water.

SOLUTION OF LITMUS.

Take of

Litmus, in powder	1 ounce
Rectified Spirit	10 fluid ounces
Distilled Water	10 fluid ounces

Boil the litmus with four fluid ounces of the spirit for one hour, and pour away the clear fluid; repeat this operation with three ounces of the spirit; and a third time with the remainder of the spirit. Digest the residual litmus in distilled water, and filter.

SOLUTION OF OXALATE OF AMMONIUM.

Take of

Oxalate of Ammonium	½ ounce
Warm Distilled Water	1 pint

Dissolve and filter.

SOLUTION OF PERCHLORIDE OF GOLD.

Take of

Fine Gold, reduced by a rolling machine to a thin lamina	60 grains
Nitric Acid	1½ fluid drachm
Hydrochloric Acid	7 fluid drachms
Distilled Water	a sufficiency

Place the gold in a flask with the nitric acid and six fluid drachms of the hydrochloric acid, first mixed with four fluid drachms of the water, and digest until it is dissolved. Add to the solution the additional fluid drachm of hydrochloric acid, evaporate at a temperature not exceeding 212° F. (100°C.) until acid vapours cease to be given off, and dissolve the chloride of gold thus obtained in five fluid ounces of distilled water. The solution should be kept in a stoppered bottle.

SOLUTION OF PERCHLORIDE OF PLATINUM.

Take of

Thin Platinum Foil	¼ ounce
Nitric Acid	a sufficiency
Hydrochloric Acid	a sufficiency
Distilled Water	7 fluid ounces

Mix a fluid ounce of the nitric acid with four fluid ounces of the hydrochloric acid and two fluid ounces of the water; pour the mixture into a small flask containing the platinum, and digest with a little heat, adding more of the acids mixed in the same proportion, should this be necessary, until the metal is dissolved. Transfer the solution to a porcelain dish, add to it a fluid drachm of hydrochloric acid, and evaporate on a water-bath, until acid vapours cease to be given off. Let the residue be dissolved in the remaining five ounces of distilled water. Filter, and preserve it in a stoppered bottle.

SOLUTION OF PHOSPHATE OF SODIUM.

Take of

Phosphate of Sodium, in crystals	1 ounce
Distilled Water	10 fluid ounces

Dissolve and filter.

SOLUTION OF POTASSIO-MERCURIC IODIDE.

Synonym.—Nessler's Reagent.

Take of

Iodide of Potassium	135 grains
Perchloride of Mercury	a sufficiency
Caustic Soda	2 ounces
Distilled Water	1 pint

Dissolve the iodide of potassium and 100 grains of the perchloride of mercury in fifteen fluid ounces of boiling distilled water. To this fluid add more aqueous solution of the perchloride of mercury until the precipitate produced no longer continues to disappear on well stirring, and a slight permanent precipitate remains. Then add the caustic soda. When the latter has dissolved, add a little more of the aqueous solution of perchloride of mercury, shake, allow to settle, and dilute the whole with distilled water to the volume of one pint. The solution should be kept in a stoppered bottle.

SOLUTION OF STANNOUS CHLORIDE.

Take of

Granulated Tin	1 ounce
Hydrochloric Acid	3 fluid ounces
Distilled Water	a sufficiency

Dilute the acid in a flask with one fluid ounce of the water, and, having added the tin, apply heat gently until gas ceases to be evolved. Add as much of the water as will make up the bulk to five fluid ounces, and transfer the solution, together with the undissolved tin, to a bottle with an accurately ground stopper.

SOLUTION OF SULPHATE OF INDIGO.

Take of

Indigo, dry and in fine powder .	5 grains
Sulphuric Acid	10 fluid ounces

Mix the indigo with a fluid drachm of the sulphuric acid in a small test-tube, and heat on a water-bath for an hour. Pour the blue liquid into the remainder of the acid, agitate the mixture, and, when the undissolved indigo has subsided, decant the clear liquid into a stoppered bottle.

SOLUTION OF SULPHATE OF IRON.

Take of

Granulated Sulphate of Iron . .	10 grains
Boiling Distilled Water . . .	1 fluid ounce

Dissolve and filter.

This solution should be recently prepared.

SOLUTION OF SULPHATE OF CALCIUM.

Take of

Sulphate of Calcium	¼ ounce
Distilled Water	1 pint

Rub the sulphate of calcium in a porcelain mortar for a few minutes with two ounces of the water, introduce the mixture thus obtained into a pint bottle containing the rest of the water, shake well several times, and allow the undissolved sulphate to subside. Filter.

SOLUTION OF SULPHYDRATE OF AMMONIUM.

Take of

Solution of Ammonia . . .	5 fluid ounces

Put three fluid ounces of the ammonia into a bottle, and conduct into this a stream of sulphuretted hydrogen as long as the gas continues to be absorbed; then add the remainder of the ammonia, and transfer the solution to a green-glass bottle furnished with a well-ground stopper.

SOLUTION OF TARTARIC ACID.

Take of

Tartaric Acid, in crystals . .	1 ounce
Distilled Water	8 fluid ounces
Rectified Spirit	2 fluid ounces

Dissolve the tartaric acid in the water, add the rectified spirit, and preserve the solution in a stoppered bottle.

SOLUTION OF YELLOW CHROMATE OF POTASSIUM.

Take of

Red Chromate of Potassium . .	295 grains
Bicarbonate of Potassium . .	200 grains
Distilled Water	10 fluid ounces

Dissolve the red chromate in the water, and exactly neutralise the solution with the bicarbonate, evolution of all carbonic acid being ensured by ebullition. Filter.

TINCTURE OF PHENOL-PHTHALEIN.

Take of

Phenol-phthalein	1 grain
Proof Spirit	500 grains

Dissolve. The solution should be colourless.

III.

TEST SOLUTIONS FOR VOLUMETRIC ESTIMATIONS.

The processes for volumetric estimations may be performed either with British or with metric weights and measures, and the solutions are so arranged that they will be of the same strength, and the same indications will be obtained in using them, whichever system is employed, without the *necessity* of altering any of the figures by which the quantities of the substances tested or of the test solutions required in the process are expressed.

According to the British system, the quantities of the substances to be tested are expressed in grains by weight, whilst the quantities of the test solutions employed in testing are expressed in grain-measures,—the grain-measure being the volume of a grain of distilled water.

According to the metric system, the quantities of the substances to be tested are expressed in grammes by weight, whilst the quantities of the test solutions employed in testing are expressed in cubic centimetres (C.C.),—the cubic centimetre being the volume of a gramme of distilled water.

As the cubic centimetre bears the same relation to the gramme that the grain-measure bears to the grain, the one system may be substituted for the other with no difference in the results, excepting that, by the metric system, all the quantities will be expressed in relation to a weight (the gramme) which is rather more than fifteen (15·432) times as great as the British grain.

In practice it will be found convenient, in substituting metric for British weights and measures, to reduce the values of all the numbers to one tenth, by moving the decimal points, and this has been done in the tables appended to the descriptions of the volumetric solutions; for the quantities indicated in the Pharmacopœia, which in grains and grain-measures can be conveniently used, would be found inconveniently large if the same numbers of grammes and cubic centimetres were employed.

The following apparatus is required in the preparation and use of these solutions.

For British weights and measures:—

1. A flask which, when filled to a mark on the neck, contains exactly 10,000 grains of distilled water at 60° F. (15°·5 C.) The capacity of the flask is therefore 10,000 grain-measures.

2. A graduated cylindrical jar which, when filled to 0, holds 10,000 grains of distilled water, and is divided into 100 equal parts.

3. A burette. A graduated glass tube which, when filled to 0, holds 1,000 grains of distilled water, and is divided into 100 equal parts. Each part therefore corresponds to 10 grain-measures.

For metric weights and measures:—

1. A glass flask which, when filled to a mark on the neck, contains one litre or 1,000 cubic centimetres.

2. A graduated cylindrical jar which, when filled to 0, contains one litre (1,000 cubic centimetres), and is divided into 100 equal parts.

3. A burette. A graduated tube which, when filled to 0, holds 100 cubic centimetres, and is divided into 100 equal parts.

(One cubic centimetre is the volume of one gramme of distilled water at 4° C.[1] (39°·2 F.) 1,000 cubic centimetres equal one litre.)

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[1] It is customary to make the measurements with metric apparatus at 60° F. (15°·5 C.)

Volumetric solutions, before being used, should be shaken, in order that they may be throughout of uniform strength. They should also be preserved in stoppered bottles. All measurements should be made at 60° F. (15°·5 C.).

VOLUMETRIC SOLUTION OF BICHROMATE OF POTASSIUM.

(Bichromate of Potassium, $K_2Cr_2O_7 = 295$.)

Take of

Bichromate of Potassium . . .	147·5 grains
Distilled Water	a sufficiency

Put the bichromate of potassium into the 10,000 grain flask, and, having half filled the flask with water, allow the salt to dissolve; then dilute the solution with more water, until it has the exact bulk of 10,000 grain-measures. 1,000 grain-measures of this solution contain 14·75 grains of the bichromate ($\frac{1}{20}$th of $K_2Cr_2O_7$, in grains), and, when added to a solution of a ferrous salt acidulated with hydrochloric acid, are capable of converting 16·8 grains of iron ($\frac{1}{20}$th of 6Fe, in grains) from the ferrous to the ferric state.

Grammes and cubic centimetres may be employed instead of grains and grain-measures, but for convenience $\frac{1}{10}$th of the numbers should be taken. Thus 14·75 grammes of bichromate of potassium should be made to form 1,000 cubic centimetres of solution. 100 cubic centimetres of this solution contain 1·475 grammes of the bichromate ($\frac{1}{200}$th of $K_2Cr_2O_7$, in grammes), and, when added to a solution of a ferrous salt acidulated with hydrochloric acid, are capable of converting 1·68 gramme of iron ($\frac{1}{200}$th of 6Fe, in grammes) from the ferrous to the ferric state.

This solution is used for determining the proportion of ferrous salt in the following preparations. It is known that the whole of the ferrous salt has been converted into a ferric salt when a minute drop of the liquid, placed in contact with a drop of a very dilute solution of ferricyanide of potassium on a white plate, ceases to strike with it a blue colour.

	British weights and measures.				Metric weights and measures.		
	Grains weight of Substance.	=	Grain-measures of Vol. Sol.	or	Grams. wt. of Substance.	=	C. C. of Vol. Sol.
Ferri Arsenias	100·0	=	225	or	10·0	=	22·5
„ Carb. Sacch.	30·0	=	287·5	or	3·0	=	28·75
„ Phosphas	30·0	=	279	or	3·0	=	27·9
„ Sulphas	42·1	=	500	or	4·21	=	50·0
„ „ Exsiccata	10·0	=	191	or	1·	=	19·1
„ „ Granulata	41·7	=	500	or	4·17	=	50·0

VOLUMETRIC SOLUTION OF HYPOSULPHITE OF SODIUM.

(Hyposulphite of Sodium crystallised, $Na_2S_2O_3,5H_2O=248$.)

Take of

Hyposulphite of Sodium, in crystals	280 grains
Distilled Water	a sufficiency

Dissolve the hyposulphite of sodium in 10,000 grain-measures of water. Fill a burette with this solution, and drop it cautiously into 1,000 grain-measures of the volumetric solution of iodine, until the brown colour is just discharged. Note the number of grain-measures (n) required to produce this effect; then put 8,000 grain-measures of the same solution into a graduated jar, and augment this quantity by the addition of distilled water until it amounts to $\frac{8000\times1000}{n}$ grain-measures. If, for example, $n=950$, the 8,000 grain-measures of solution should be diluted to the bulk of $\frac{8000\times1000}{950}=8{,}421$ grain-measures. 1,000 grain-measures of this solution contain 24·8 grains of the hyposulphite ($\frac{1}{10}$th of $Na_2S_2O_3,5H_2O$, in grains), and therefore correspond to 12·7 grains of iodine ($\frac{1}{10}$th of an atomic weight in grains).

Grammes and cubic centimetres may be employed instead of grains and grain-measures, but for convenience $\frac{1}{10}$th of the numbers should be taken. 100 cubic centimetres of this solution contain 2·48 grammes of the hyposulphite ($\frac{1}{100}$th of $Na_2S_2O_3,5H_2O$, in grammes), and therefore correspond to 1·27 gramme of iodine ($\frac{1}{100}$th of an atomic weight in grammes).

This solution is used for testing the following substances.

In each case, excepting that of iodum, a solution of iodide of potassium and hydrochloric acid are added to the substance, and the amount of iodine so liberated is indicated by this solution.

	British weights and measures.				Metric weights and measures.		
	Grains weight of Substance.	=	Grain-measures of Vol. Sol.	or	Grams. wt. of Substance.	=	C. C. of Vol. Sol.
Calx Chlorinata	5·0	=	467	or	0·50	=	46·7
Iodum	12·7	=	1000	or	1·27	=	100·0
Liq. Calc. Chlorinatæ	80·0	=	450	or	8·00	=	45·0
„ Chlori	439·0	=	750	or	43·90	=	75·0
„ Sodæ Chlorinatæ	70·0	=	500	or	7·00	=	50·0

VOLUMETRIC SOLUTION OF IODINE.

(Iodine, I = 127.)

Take of

Iodine	127 grains
Iodide of Potassium	180 grains
Distilled Water	a sufficiency

Put the iodide of potassium and the iodine into the 10,000 grain flask, fill the flask to about two-thirds its bulk with distilled water, gently agitate until solution is complete, and then dilute the solution with more water until it has the exact volume of 10,000 grain-measures. 1,000 grain-measures of this solution contain $\frac{1}{10}$th of an atomic weight in grains (12·7 grains) of iodine, and therefore correspond to 1·7 grain of sulphuretted hydrogen, 3·2 grains of sulphurous anhydride, and 4·95 grains of arsenious anhydride.

Grammes and cubic centimetres may be employed instead of grains and grain-measures, but for convenience $\frac{1}{10}$th of the numbers should be taken. 100 cubic centimetres contain 1·27 gramme of iodine, and correspond to 0·17 gramme of sulphuretted hydrogen, 0·32 gramme of sulphurous anhydride, and 0·495 gramme of arsenious anhydride.

This solution is used for testing the following substances. It is dropped from the burette into the liquid to be tested until free iodine begins to appear in the solution.

	British weights and measures.				Metric weights and measures.		
	Grains weight of Substance.	=	Grain-measures of Vol. Sol.	or	Grams. wt. of Substance.	=	C. C. of Vol. Sol.
Acid. Arseniosum .	4·0	=	808	or	0·40	=	80·80
„ Sulphurosum .	64·0	=	1000	or	6·40	=	100·00
Liquor Arsenicalis .	442·0	=	875	or	44·20	=	87·50
„ Arsenici Hydrochloricus	442·0	=	875	or	44·20	=	87·50
Sodii Hyposulphis .	24·8	=	1000·	or	2·48	=	100·

VOLUMETRIC SOLUTION OF NITRATE OF SILVER.

(Nitrate of Silver, $AgNO_3 = 170$.)

Take of

Nitrate of Silver	170 grains
Distilled Water	a sufficiency

Put the nitrate of silver into the 10,000 grain flask, and, having half filled the flask with water, allow the salt to dissolve; then dilute the solution with more water until it has the exact bulk of 10,000 grain-measures. The solution should be kept in an opaque stoppered bottle. 1,000 grain-measures of this solution contain $\frac{1}{10}$th of a molecular weight in grains of nitrate of silver (or 17·0 grains).

Grammes and cubic centimetres may be employed instead of grains and grain-measures, but for convenience $\frac{1}{10}$th of the numbers should be taken. 100 cubic centimetres contain $\frac{1}{100}$th of a molecular weight in grammes of nitrate of silver (or 1·7 gramme).

It is used in testing the following substances:—

	British weights and measures.				Metric weights and measures.		
	Grains weight of Substance.	=	Grain-measures of Vol. Sol.	or	Grams. wt. of Substance.	=	C. C. of Vol. Sol.
Acid. Hydrocyan. Dil .	270	=	1000	or	27·0	=	100·0
Ammonii Bromidum .	5	=	508·5 to 514·5	or	0·5	=	50·85 to 51·45
Potassii Bromidum .	10	=	838 to 850	or	1·0	=	83·8 to 85·0
Potassii Cyanidum .	10	=	730	or	1·0	=	73·0
Potassii Iodidum .	10	=	602	or	1·0	=	60·2
Sodii Bromidum .	10	=	960	or	1·0	=	96·0
Sodii Iodidum . .	10	=	660	or	1·0	=	66·0

VOLUMETRIC SOLUTION OF OXALIC ACID.

(Crystallised Oxalic Acid, $H_2C_2O_4,2H_2O = 126$.)

Take of

Oxalic Acid, in crystals . . .	660 grains
Distilled Water	a sufficiency

Put the oxalic acid into the 10,000 grain flask, fill the flask to about two-thirds of its bulk with water, allow the acid to dissolve, and then dilute the solution with more water until it has the exact volume of 10,000 grain-measures. Fill a burette with the fluid, and add it gradually to a solution of 10·6 grains of pure carbonate of sodium (which may be obtained by heating the ordinary pure bicarbonate of sodium to redness in a platinum crucible for a quarter of an hour), containing a few drops of solution of litmus, until the red colour produced ceases to change to blue on boiling. Note the number of grain-measures used (n), then put 9,000 grain-measures of the solution of oxalic acid into a graduated jar, and augment this quantity by the addition of distilled water until it amounts to $\frac{9000 \times 200}{n}$ grain-measures. 1,000 grain-measures of this solution contain half a molecular weight in grains (63 grains) of oxalic acid, and are therefore capable of neutralising one molecular weight in grains of such alkalies as potash, KHO; or soda, $NaHO$; or half the molecular weight in grains of such salts as anhydrous carbonate of sodium, Na_2CO_3, crystallised carbonate of sodium ($Na_2CO_3,10H_2O$), etc.

Grammes and cubic centimetres may be employed instead of grains and grain-measures, but for convenience $\frac{1}{10}$th of the numbers should be taken. 100 cubic centimetres contain $\frac{1}{20}$th of a molecular weight in grammes (6·3 grammes) of oxalic acid, and will neutralise $\frac{1}{10}$th of a molecular weight in grammes of an alkali.

The following substances are tested with this solution:—

	British weights and measures.				Metric weights and measures.		
	Grains weight of Substance.	=	Grain-measures of Vol. Sol.	or	Grams. wt. of Substance.	=	C. C. of Vol. Sol.
Ammonii Carbonas .	52·3	=	1000	or	5·23	=	100·0
Borax . . .	191·0	=	1000	or	19·10	=	100·0
Liquor Ammoniæ .	85·0	=	500	or	8·50	=	50·0
,, ,, Fort. .	52·3	=	1000	or	5·23	=	100·0
,, Calcis . .	4375·0	=	180	or	437·5	=	18·0
,, ,, Sacchar.	460·2	=	254	or	46·02	=	25·4
,, Plumbi Subacet.	284·5	=	500	or	28·45	=	50·0
,, Potassæ . .	462·9	=	482	or	46·29	=	48·2
,, ,, Efferves.	4375·0	=	150	or	437·50	=	15·0
,, Sodæ . .	458·0	=	470	or	45·80	=	47·0
,, ,, Efferves. .	4375·0	=	178	or	437·50	=	17·8
Plumbi Acetas .	38·0	=	200	or	3·80	=	20·0
Potassa Caustica .	56·0	=	900	or	5·60	=	90.0
Potassii Bicarbonas	50·0	=	500	or	5·00	=	50·0
,, Carbonas .	83·0	=	980	or	8·30	=	98·0
,, Citras . .	102·0	=	1000	or	10·20	=	100·0
,, Tartras .	122·0	=	990	or	12·2	=	99·0
,, ,, Acida	204·0	=	1000	or	20·40	=	100·0
Soda Caustica .	40·0	=	900	or	4·00	=	90·0
,, Tartarata .	141·0	=	990	or	14·1	=	99·0
Sodii Bicarbonas .	84·0	=	1000	or	8·4	=	100·0
,, Carbonas .	143·0	=	960	or	14·30	=	96·0
Sodium . . .	23·0	=	975	or	2·30	=	97·5

VOLUMETRIC SOLUTION OF SODA.

(Hydrate of Sodium, $NaHO = 40$.)

Take of

Solution of Soda	a sufficiency
Distilled Water	a sufficiency

Fill a burette with the solution of soda, and cautiously drop this into 1,000 grain-measures of the volumetric solution of oxalic acid until the acid is exactly neutralised as indicated by litmus. Note the number of grain-measures (n) of the solution of soda used, and having then introduced 9,000 grain-measures of it into a graduated jar, augment this quantity by the addition of water, until it becomes $\frac{9000\times1000}{n}$ grain-measures. If, for example, $n=980$, the 9,000 grain-measures should be augmented to $\frac{9000\times1000}{980}=9,677$ grain-measures. 1,000 grain-measures of this solution contain one molecular weight in grains (40 grains) of hydrate of sodium, and will therefore neutralise one molecular weight in grains of any monobasic acid, or half the molecular weight in grains of any dibasic acid, etc.

Grammes and cubic centimetres may be employed instead of grains and grain-measures, but for convenience $\frac{1}{10}$th of the numbers should be taken. 100 cubic centimetres contain $\frac{1}{10}$th of a molecular weight in grammes (4 grammes) of hydrate of sodium, and will neutralise $\frac{1}{10}$th of a molecular weight in grammes of a monobasic acid.

This solution is used for testing the following substances:—

	British weights and measures.				Metric weights and measures.		
	Grains weight of Substance.	=	Grain-measures of Vol. Sol.	or	Grams. wt. of Substance	=	C. C. of Vol. Sol.
Acetum . . .	445·4	=	402	or	44·54	=	40·2
Acidum Aceticum .	182·0	=	1000	or	18·20	=	100·0
,, ,, Dilutum	440·0	=	313	or	44·00	=	31·3
,, ,, Glaciale	60·0	=	990	or	6·00	=	99·0
,, Citricum .	70·0	=	1000	or	7·00	=	100·0
,, Hydrobrom. Dil.	810.0	=	1000	or	81·00	=	100·0
,, Hydrochloricum	114·8	=	1000	or	11·48	=	100·0
,, ,, Dilutum	345·0	=	1000	or	34·50	=	100·0
,, Lacticum .	120·0	=	1000	or	12·00	=	100·0
,, ,, Dilutum	800·0	=	1000	or	80·00	=	100·0
,, Nitricum .	90·0	=	1000	or	9·00	=	100·0
,, ,, Dilutum	361·3	=	1000	or	36·13	=	100·0
,, Nitro-hydrochl. Dil.	352·0	=	883	or	35·20	=	88·3
,, Sulphuricum .	50·0	=	1000	or	5·00	=	100·0
,, ,, Aromaticum	195·0	=	500	or	19·50	=	50·0
,, ,, Dilutum .	359·0	=	1000	or	35·90	=	100·0
,, Tartaricum .	25·0	=	330	or	2·50	=	33·0

INDICATORS OF THE TERMINATION OF REACTIONS IN VOLUMETRIC OPERATIONS.

Mucilage of Starch.

It gives an intense blue colour with iodine. It may be used with the following substances:—

Acidum Arseniosum
,, Sulphurosum
Calx Chlorinata
Iodum
Liquor Arsenicalis

Liquor Arsenici Hydrochloricus
Calcis Chlorinatæ
Sodæ Chlorinatæ
Chlori
Sodii Hyposulphis

Solution of Ferricyanide of Potassium.

It gives an intensely blue precipitate with ferrous salts, but none with ferric salts. It is used with the following substances:

Ferri Arsenias
,, Carbonas Saccharata
,, Phosphas
Ferri Sulphas
,, ,, Exsiccata
,, ,, Granulata

Solution of Litmus.

It gives a red colour with acids and a blue colour with alkalies. It may be used with the following substances:—

Acidum Hydrochloricum
,, ,, Dilutum
,, Nitricum
,, ,, Dilutum
,, Nitro-hydrochl. Dil.
,, Sulphuricum
,, ,, Arom.
,, ,, Dil.
Ammonii Carbonas
Borax
Liquor Ammoniæ
,, ,, Fortior
,, Calcis
,, ,, Saccharatus
Liquor Potassæ
,, ,, Effervescens
,, Sodæ
,, ,, Effervescens
Potassa Caustica
Potassii Bicarbonas
,, Carbonas
,, Citras
,, Tartras
,, ,, Acida
Soda Caustica
,, Tartarata
Sodii Bicarbonas
,, Carbonas

Solution of Yellow Chromate of Potassium.

It gives a red colour with nitrate of silver, but not until any soluble bromide or iodide present is entirely decomposed. It may be used with the following substances:—

Ammonii Bromidum
Potassii Bromidum
Potassii Iodidum
Sodii Bromidum
Sodii Iodidum

Tincture of Phenol-Phthalein.

It gives an intense red colour with potash or soda. It may be used with the following substances:—

Acetum
Acidum Aceticum
,, ,, Dilutum
Acidum Aceticum Glaciale
,, Citricum
,, Tartaricum

SYMBOLS AND ATOMIC WEIGHTS OF THE ELEMENTARY BODIES mentioned in the British Pharmacopœia.

ELEMENTARY BODIES.	SYMBOLS AND ATOMIC WEIGHTS.
Aluminium	Al = 27
Antimony (Stibium)	Sb = 120
Arsenium	As = 75
Barium	Ba = 137
Bismuth	Bi = 209
Boron	B = 11
Bromine	Br = 80
Calcium	Ca = 40
Carbon	C = 12
Cerium	Ce = 141
Chlorine	Cl = 35·5
Chromium	Cr = 52·5
Copper (Cuprum)	Cu = 63·4
Gold (Aurum)	Au = 196·5
Hydrogen	H = 1
Iodine	I = 127
Iron (Ferrum)	Fe = 56
Lead (Plumbum)	Pb = 207
Lithium	L = 7
Magnesium	Mg = 24
Manganese	Mn = 55
Mercury (Hydrargyrum)	Hg = 200
Nitrogen	N = 14
Oxygen	O = 16
Phosphorus	P = 31
Platinum	Pt = 195
Potassium (Kalium)	K = 39
Silver (Argentum)	Ag = 108
Sodium (Natrium)	Na = 23
Sulphur	S = 32
Tin (Stannum)	Sn = 118
Zinc	Zn = 65

WEIGHTS AND MEASURES OF THE BRITISH PHARMACOPŒIA.

WEIGHTS.

1 Grain	gr.			
1 Ounce (Avoir.)	oz.		=	437·5 grains
1 Pound	lb.	= 16 ounces	=	7000 ,,

MEASURES OF CAPACITY.

1 Minim	min.		
1 Fluid Drachm	fl. drm.	=	60 minims
1 Fluid Ounce	fl. oz.	=	8 fluid drachms
1 Pint	O.	=	20 fluid ounces
1 Gallon	C.	=	8 pints

MEASURES OF LENGTH.

1 inch	in.	
12 inches	= 1 foot	
36 inches	= 3 feet	= 1 yard

RELATION OF MEASURES TO WEIGHTS.

1 Minim is the measure of		0·9114583	grains of water
1 Fluid Drachm ,,		54·6875	,,
1 Fluid Ounce ,,	1 ounce or	437·5	,,
1 Pint ,,	1·25 pound or	8750·0	,,
1 Gallon ,,	10 pounds or	70000·0	,,

WEIGHTS AND MEASURES OF THE METRIC SYSTEM.

WEIGHTS.

1 Milligramme =the thousandth part of one grm. or 0·001 grm.
1 Centigramme =the hundredth ,, 0·01 ,,
1 Decigramme =the tenth ,, 0·1 ,,
1 Gramme =weight of a cubic centimetre of water at 4° C. 1·0 ,,
1 Dekagramme =ten grammes ,, 10·0 ,,
1 Hectogramme =one hundred grammes ,, 100·0 ,,
1 Kilogramme =one thousand grammes ,, 1000·0 ,,

MEASURES OF CAPACITY.

1 Millilitre = 1 cub. centim. or the mea. of 1 gram. of water
1 Centilitre = 10 ,, 10 ,, ,,
1 Decilitre = 100 ,, 100 ,, ,,
1 Litre =1000 ,, 1000 ,, (1 kilo.)

MEASURES OF LENGTH.

1 Millimetre =the thousandth part of one metre or 0·001 metre
1 Centimetre=the hundredth ,, 0·01 ,,
1 Decimetre =the tenth part ,, 0·1 ,,
1 Metre 1·0 ,,

RELATION OF THE WEIGHTS OF THE BRITISH PHARMACOPŒIA TO THE METRIC WEIGHTS.

1 Pound = 453·5927 grammes
1 Ounce = 28·3495 ,,
1 Grain = 0·0648 ,,

RELATION OF MEASURES OF CAPACITY OF THE BRITISH PHARMACOPŒIA TO THE METRIC MEASURES.

1 Gallon =4·543458 litres
1 Pint =0·567932 ,, or 567·932 cubic centimetres
1 Fluid Ounce =0·028397 ,, 28·397 ,,
1 Fluid Drachm=0·003550 ,, 3·550 ,,
1 Minim =0·000059 ,, 0·059 ,,

RELATION OF THE METRIC WEIGHTS TO THE WEIGHTS OF THE BRITISH PHARMACOPŒIA.

1 Milligramme = 0·015432 grains
1 Centigramme = 0·15432 ,,
1 Decigramme = 1·5432 ,,
1 Gramme = 15·432 ,,
1 Kilogramme = 2 lbs. 3 oz. 119·8 grs. or 15432·349 ,,

RELATION OF THE METRIC MEASURES TO THE MEASURES OF THE BRITISH PHARMACOPŒIA.

1 Millimetre = 0·03937 inches
1 Centimetre = 0·39371 ,,
1 Decimetre = 3·93708 ,,
1 Metre =39·37079 ,, or 1 yard 3·37 inches
1 Cubic Centimetre = 15·432 grains[1]
1 Litre=1·76077 pint or 1 pint 15 oz. 1 dr. 43 m.

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[1] The cubic centimetre is a standard at 4° C. (39°·2 F.), the grain at 62° F. (16°·66 C.)

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Synonyms are printed in italics. Articles included in the Appendix are preceded by an asterisk (*).

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